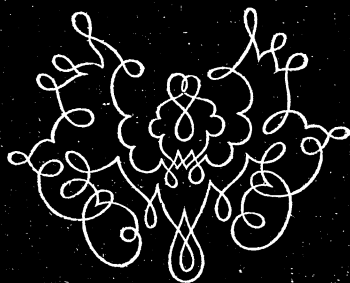


LIFE OF
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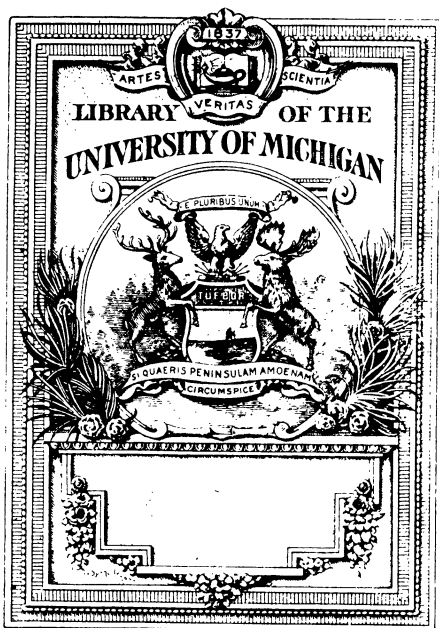
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FITZMAURICE

SIR WILLIAM PETTY

1623 — 1687



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SIR WILLIAM PETTY

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Sir William Petty,

from a picture in the possession of W. B. Monck Esq.

THE LIFE
OF
SIR WILLIAM PETTY

1623—1687

ONE OF THE FIRST FELLOWS OF THE ROYAL SOCIETY
SOMETIME SECRETARY TO HENRY CROMWELL
MAKER OF THE 'DOWN SURVEY' OF IRELAND, AUTHOR OF
'POLITICAL ARITHMETIC' &c.

CHIEFLY DERIVED FROM PRIVATE DOCUMENTS HITHERTO UNPUBLISHED

By LORD EDMOND FITZMAURICE

AUTHOR OF 'THE LIFE OF WILLIAM, EARL OF SHELBURNE'

WITH MAP AND PORTRAITS

LONDON
JOHN MURRAY, ALBEMARLE STREET
1895

P R E F A C E

THE PRESENT WORK is mainly founded on the collection of MSS. now at Bowood, consisting of the papers originally belonging to Sir William Petty, which afterwards passed to his grandson, John Fitzmaurice, son of Anne Petty, Countess of Kerry, and afterwards Earl of Shelburne; and of the letters written by Sir William Petty to Sir Robert Southwell, which appear to have been added to the collection at Bowood by the third Marquis of Lansdowne, through a purchase made at the time of the sale of the MSS. of Lord de Clifford, the then representative of the Southwell family. The economic works of Sir William Petty have also been freely referred to, as they frequently throw light on the events of his life, as well as on his opinions relating to politico-economic subjects. I have also used a number of scattered MSS., mostly in the Sloane and Egerton collections at the British Museum, and in the Rawlinson collection at the Bodleian Library, Oxford.

Of the transactions connected with the Survey of Ireland, Sir William Petty has left more than one account: (1) 'The History of the Down Survey,' of which three MSS. exist: the first, originally the property of Sir Robert Southwell, to whom it was entrusted by Sir William Petty towards the close of his life, is now in the Library of Trinity College, Dublin;

the second is in the Library at Bowood ; the third is in the Library of King's Inn, Dublin. It is from these MSS. that 'The History of the Down Survey,' edited with notes by Sir Thomas Larcom for the Irish Archaeological Society, was printed (Dublin, 1851), and the references are to that volume, the notes and appendices to which are of great value, from their combination of historical knowledge with a perfect acquaintance with the details of the practice of the art of surveying. (2) 'Reflections on some Persons and Things in Ireland,' which purports to be a correspondence between Dr. Petty and a 'candid friend,' but the whole of which is the work of Dr. Petty himself. It is a more popular account of the events with which 'The History of the Down Survey' deals in detail. (3) 'A Brief Account of the most Material Passages relating to the Survey managed by Dr. Petty in Ireland, anno 1655-1656.' This tract is reprinted in Sir Thomas Larcom's work, pp. xiii.-xvii., as an introduction to the 'History of the Survey.' (4) 'The Report to the Council of the Survey of the Soldiers' Lands,' of which only a small and imperfect fragment exists among the Petty MSS. at Bowood.

The MSS. of Sir Robert Southwell passed into the hands of the De Clifford family, and were sold in 1834. The copy of the 'Down Survey' in that collection was bought by Mr. James Weale, of the Office of Woods, and at his death by the Government. It was subsequently presented to Trinity College, Dublin. The copy at Bowood was removed to England from Shelburne House, Dublin, where it was seen in 1777.

In the British Museum is a valuable MS. volume from the Library in Dublin, which belonged to the late Dr. Nelligan. Besides a copy of the 'Political Anatomy' it contains the four papers described in the notes to Chapter IX. of this

work, and also some memoranda by a contemporary writer on Dr. Petty's method of work while engaged on the Survey. I have referred to this volume under the title of the 'Nelligan MS.'¹

My work has been greatly lightened by the use of a syllabus of the most important of the Petty MSS. at Bowood, made by my late uncle, the Earl of Kerry, who a short time before his death, as stated in 'Moore's Diary and Correspondence,' commenced collecting materials for a 'Life of Sir William Petty.' The Earl of Kerry had also collected some information from extraneous sources. In a few cases, when I have not been able to identify the origin of it, I have referred in the notes to the MS. he left.

I desire to acknowledge the obligations I owe to the notes of Sir Thomas Larcom in his edition of 'The History of the Down Survey,' and to the studies on the 'Irish Surveys' by Mr. W. H. Harding, published in the 'Transactions of the Royal Irish Academy,' vol. xxiv., parts i. and iii. (Antiquities);² and to Mr. Prendergast's work 'On the Cromwellian Settlement of Ireland' (Longmans, 1865).

The references to Röscher are to a study by that author on 'The English Political Economists of the 17th and 18th Centuries,' published in the 'Abhandlungen der philologisch-historischen Classe der Königlich Sächsischen Gesellschaft der Wissenschaften,' vol. ii. (Leipzig, 1857), which is probably the most complete account of Petty's work as an economist which has yet been published. I am indebted to Mr. Madden, Sub-Librarian of the Bodleian Library, for the opportunity I have had of reading a very careful dissertation on Sir William

¹ British Museum, Miscellaneous Series, 21128, Plut. clxiii. D.

² The references are throughout to Part I. except where otherwise stated.

Petty, presented to the Faculty of Political Science of the University of Munich by Mr. W. L. Bevan, which as yet is only privately printed, but deserves a wider circulation.

The references to Evelyn's 'Memoirs' are to the edition of 1854, published by Colburn; and those to Pepys's 'Diary' refer to the edition of 1893. The references to the 'Bodleian Letters' are to the work generally known as 'Aubrey's Lives,' published in the second volume of the 'Bodleian Letters' (London, 1813).

I have received valuable assistance in the course of my work, which I desire to acknowledge, from Mr. G. Bickley and Mr. Jeayes, of the MS. Department in the British Museum; from Mr. Hubert Hall, Deputy-Keeper of the Record Office; from Mr. Wrix, of the Royal Society; from Mr. E. Nicolson, Librarian of the Bodleian Library; from Mr. George Scharf; from Mr. Charles Heberden, M.A., Principal of Brasenose; from Mr. A. C. Peskett of Magdalene College, Cambridge; and from Mr. C. H. Firth and Mr. Archibald Bence-Jones.

Through the kind permission of the Marquis of Bath I have been allowed to consult a MS. at Longleat containing some interesting details as to Sir William Petty's death and copies of some of his papers.

I desire to express my obligation to Mr. W. S. Taylor, the editor of 'England under Charles II.' in the 'Series of English History by Contemporary Writers,' published by Messrs. Nutt, for the references in that book to 'Rugge's MS. Diary' and the 'Secret History of Whitehall.'

In the Appendix is printed a complete list of Sir William Petty's Works, found in his own handwriting at Wycombe Abbey, and transcribed by Lord Shelburne in the last century

on the fly-leaf of a copy of the 'Petty Tracts' published by Boulter Grierson (1769) at Dublin, which contains the principal works of Sir William Petty, and is the edition referred to throughout the notes in the present book, in the quotations from his writings.

By the kind permission of Mr. Charles Monck, I have been allowed to reproduce the picture of Sir William Petty, by Sir Peter Lely, now at Coley Park; and by the kind permission of the Master and Fellows of Magdalene College, Cambridge, I have been able to present the readers of this book with an authentic likeness of the celebrated 'double bottom' vessel, from the Pepysian Library at that College.

I desire to acknowledge specially the valuable help I have received in regard to several points in the seventh chapter from Professor Henry Sidgwick.

The map illustrating the settlement of Ireland was originally prepared for Mr. Charles Walpole's 'History of Ireland,' and is reproduced by the kind permission of Messrs. Kegan Paul, Trench, Trübner, & Co.

E. F.

1894.

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LIFE

OF

SIR WILLIAM PETTY



CHAPTER I

EARLY LIFE

1623-1652

Early days—Friendship with Hobbes—Correspondence with Dr. Pell—Pamphlet on education—John Petty—Life at Oxford—Case of Ann Green—University Professor of Anatomy.

WILLIAM PETTY was born at his father's house at Rumsey, a little town in Hampshire on the banks of the Test, famous as a seat of the woollen industry, on the 26th of May, 1623, 'eleven hours, 42' 56" afternoon, Trinity Sunday,' according to Aubrey, who puts down the event with his usual love of minute detail. He was the third child of Antony Petty and Francesca, his wife. Aubrey says that Antony Petty, the father of William, 'was born on the Ash Wednesday before Mr. Hobbes, 1587; and that by profession he was a clothier, and also did dye his own cloths.'¹

The home of the Pettys seems to have been near the ancient conventual church of the Benedictine nuns, which the parishioners at the Reformation are said to have bought

¹ *Bodleian Letters*, ii. 481. The details as to the Petty family will name of Petty is still common in the neighbourhood of Rumsey. Some be found in ch. x., p. 315.

for 100*l.* as a place of worship. The chief amusement of William Petty, when a boy, was 'looking on the artificers: *e.g.* smyths, the watchmakers, carpenters, joiners, &c.; and, at twelve years old, he could have worked at any of these trades,' according to Aubrey's account. But he is also said to have developed a satirical and jocular humour, and a power of caricature in drawing, which made the neighbourhood esteem him a peculiar person, and, to use his own words, 'a perfect cheiromantes.'² At Bamsey he went to school, and 'learned by twelve years a competent smattering of Latin, and was entered into the Greek before 15;' and there also, Aubrey relates, 'happened to him the most remarkable incident of his life, which was the formation of all the rest of his greatness and acquiring riches. He informed me,' says Aubrey, 'that about 15, in March, he went over to Caen, in Normandy, in a vessel that went hence with a little stock, and began to play the merchant, and had so good success that he maintained himself and also educated himself: this I guess was the most remarkable accident that he meant.' Besides 'playing the merchant' he found time to learn 'the French tongue, and perfected himself in Latin; and had Greek enough to serve his turn.' He also 'studied the arts.' It appears that, anxious above all things to see the great world outside his native town, after some unsuccessful attempts to exchange home and employment with a lad from the Channel Islands, he ultimately bound himself apprentice to the master of a vessel, in which he sailed for France, and on this journey discovered for the first time that he was short-sighted. 'He knew not that he was purblind,' says Aubrey, 'till his master (the master of a ship) bade him climb up the rope ladder; and give notice when he espied a steeple, somewhere upon the coast, which was a landmark for the avoiding of a shelf. At last the master saw it from the deck; and they fathomed, and found they were but in foot water; whereupon as I remember his master drubbed him with a cord.'³

² Petty MSS.

³ *Bodleian Letters*, ii. 482.

At sea he appears to have been ill-treated by the sailors and finally abandoned by them on the French coast near Caen, with a broken leg, in a small inn. The tale of his sufferings was explained by him in Latin, and by the time he had recovered, the whole society of Caen had heard of his adventures, and was wondering at the precocious ability of the English cabin boy. As soon as he was able to move, he was sent for by an officer who, having served with distinction in the Civil Wars of France, was desirous of knowing something of naval tactics also. These young Petty contrived to expound in Latin, to the satisfaction of his employer. A gentleman of rank desirous of visiting the English coast, but unacquainted with the language, next employed him as teacher, and paid him well enough to enable him to buy a suit of clean linen. ‘*Vestibus irradio nitidis*’ is the triumphant record of this transaction in some Latin verses containing a sketch of his early life and adventures.⁴

Determining to abandon the sea, he entered himself at a private school at Caen, but did not fail to discover that the education offered by the Jesuits’ College was the best to be had. It was the habit of the students from all the Colleges to bathe in the river which runs through the promenades which surround the town. Here William Petty met and made acquaintance with many of the Jesuit students. The result was an offer on the part of the Fathers to take the young Englishman as a pupil, on condition that their attempts on his religion should be confined to prayers for his conversion: an offer which he accepted.

The following letter, written long after, contains a sketch of his adventures at this period:

‘Piccadilly, 14 July, 1686.

‘Deare Cozen,—The next part of my answer to yours of the 10th inst. is, (1) How I gott the shilling I mentioned to have had at Xmas, 1636: which was by 6^d I got of a country Squire for showing him a pretty trick on the cards, which begot the other 6^d fairly won at cards. (2) How this

⁴ Petty MSS.

shilling came to bee 4^s 6^d. When I went to sea was 6^d given (or rather paid) mee by Mother Dowling, who having been a sinner in her youth, was much relieved by my reading to her in the "Crums of Comfort," Mr. Andrews' "Silver Watchbell," and "Ye plain man's pathway to Heaven." The next 6^d I got for an old Horace given (why do I say given) or delivered mee by Len : Green, for often construing to him in Ovid's Metamorphoses till my throat was soare, though to so little purpose that hee, coming to say his lesson, began, *Protinus* (signifying "soon after") King Protinus, &c. My next Booty was 18^d, given me by my God-father for making 20 verses to congratulate his having been made a Doctor in Divinity by some good Luck. The other shilling was impressed by my Aunt, whom I repaid by a Bracelet bought in France for 4^d but judged to be worth 16^d. This 4^s 6^d was layd out in France upon pittiful brass things with cool'd glasse in them, instead of diamonds and rubies. These I sold at home to the young fellowes, whom I understood to have sweethearts, for treble what they cost. I also brought home 2 hair hatts (which within these 11 years might have been seen) by which I gayned little lesse. Having been ten months at sea, I broak my leg, and was turned ashore, strangely visited by many, by ye name of "*le Petit Matchot Anglois qui parle Latin et Grec*" neer my recovery; and, when I resolved to quit ye sea, as not being able to bear the envy of our crew against mee for being able to say my *Compassé*, shift my tides, keep reckoning with my plain scale, and for being better read in the "seaman's Kalender," the "safeguard of saylers," &c., than the seamen of our ship, I made verses to the Jesuits, expressing my desires of returning to the muses, and how I had been drawn from them by reading Legends of our countryman, Captⁿ Drake, in these words :

Rostra ratis Dracis nimis admiratus, abivi
Nauta scholam fugiens, et dulcia carmina sprevi.

'I must not omit that "La Grande Jane," ye farrier's wife, had an *escu* for setting my broken leg; the Potticary 10 sols, and 8 sols a payer of crotches, of which I was after-

wards cheated. Upon the remainder (my Ring trade being understood and lost) I set up, with the remainder of 2 cakes of Bees-wax sent mee in reliefe of my calamity, upon the trade of playing cards, white starch, and hayre hatts, which I exchanged for tobacco pipes and the shreds of Letter and parchment, wherewith to size paper. By all which I gott my expences, followed by Colledge, proceeded in Mathematics, and cleer'd four pounds.' ⁵

After leaving the college at Caen,⁶ he entered the Royal Navy, having obtained at Caen, according to his own account, 'the Latin, Greek, and French tongues; the whole body of common arithmetic, the practical geometry and astronomy; conducing to navigation, dialling, &c.; with the knowledge of several mathematical trades; all which and having been at the University of Caen, preferred me to the King's Navy, where at the age of 20 years,' he says, 'I had gotten about three-score pounds, with as much mathematics as any of my age was known to have had.'

At the outbreak of the Civil War, feeling no taste for military adventures, and probably sharing the hostility of the West of England clothiers to the Cavaliers, he retired to the Continent. Before his return, there had elapsed three years spent by him almost entirely in France and the Netherlands. He frequented the schools at Utrecht, Leyden, and Amsterdam, and the School of Anatomy in Paris. In that capital, with the help of some English letters of introduction from Dr. Pell, the mathematician, he made the acquaintance of Hobbes, like himself a refugee from civil strife. The great philosopher at once recognised his ability and admitted him to familiar intercourse. Hobbes was at the moment engaged in the preparation of a treatise on optics. Aubrey says 'that they read

⁵ July 14, 1686, to Sir R. Southwell.

⁶ In several of the published copies of his will, *e.g.* in that contained in the *Petty Tracts*, published by Boulter Grierson, Dublin, 1769, and reprinted

in Lodge's *Peerage*, 'Caen' is printed 'Oxford.' The original of the will is in the Registry of the Probate Court, Dublin. There is a copy at the British Museum.

Vesalius together,⁷ and that the younger student traced the optical schemes for the elder, for he had a very fine hand in those days for drawing, which draughts Mr. Hobbes did much commend.⁸

Through Hobbes, Petty became acquainted in Paris with several of the most brilliant of the English refugees, such as the Marquis of Newcastle and Sir Charles Cavendish, and also with Father Marsin Mersén, the mathematician. Mersén's house was the centre of a distinguished scientific and literary circle, which his genial character held together, notwithstanding the bickerings and quarrels which frequently raged among the members. In that circle all the great ideas were rife, which before the century was over, and notwithstanding the recrudescence of theological strife, were to transform the world in every department of human knowledge. The atmosphere of the time throbbed with scientific discovery, and the mental horizon of man seemed daily to grow wider. In the history of France the period was one of special brilliancy. A Cardinal more Statesman than Churchman ruled the country. The rights of the Calvinists were secured by the privileges, as yet unimpaired, which the Edict of Nantes had granted, and a political alliance existed with Sweden, the greatest Protestant military state of the Continent. Free inquiry in philosophy and science, driven out, like Protestantism, from Spain and Italy, had found a refuge north of the Alps, on an implied understanding that no attack was to be made on the unity of the State, and that the established religion was not to be too openly criticised. It was the time of Gassendi and Descartes in philosophy; of Pascal and St. Cyran in theology; of St. Vincent de Paul in the sphere of practical philanthropy. The French world of science had been deeply stirred by the discoveries in astronomy, physics, and physiology, of Galileo,

⁷ Andreas Vesalius, a celebrated Dutch anatomist, 1514–1564. His *De Humanæ corporis Fabricâ* was published in 1543. A complete edition of his writings appeared at Leyden, 1725.

⁸ *Boileau's Letters*, ii. 481. The 'Tractatus Opticus' was included in a collection of scientific tracts published by Marsin Mersén under the title of *Cogitata Physico-Mathematica* in 1644.

Kepler, and Hervey. Hobbes himself was the rival and rather petulant correspondent of Descartes on the origin of knowledge.

The following letters written at this time by William Petty to Dr. Pell, who had fled to Amsterdam owing to the stress of the times, may be read with interest. Pell is now chiefly remembered for his controversy with the Danish mathematician, Longomontanus, on the quadrature of the circle, a subject which had also a fatal attraction for Hobbes :⁹—

‘Sir,—Father Mersen, his desire to convey this inclosed to you, serves me for a happie occasion to express my thankfulness for ye good of that acquaintance with Mr. Hobbes, which your letters procured mee; for by his meanes, my Lord of Newcastle, and your good friend, Sir Charles Cavendish, have been pleased to take notice of mee; and by his meanes also, I became acquainted with Father Mersen, a man who seems to mee not in any meane degree to esteem you and your works; and who wishes your studies may ever succcede happily, hoping (as others doe) that ye world shall receyve hope and benefitt by them. Sir, I desire you not to conceive that any neglect or forgetfulness hath caused my long silence, for ye often speech I have of you, either with Sir Charles, Mr. Hobbes, and Father Mersen (besides the courtesy I receyved from you), makes mee sufficiently to remember you. But to speake ye truth, it was want of business worthy to make ye subject of a letter of 16^d postage, especially since Mr. Hobbes served you in procuring and sending you ye demonstrations of our French mathematicians. I could wish, with Sir Charles, that we could see your way of Analyticks abroad; or, if a systeme of ye whole Art were too much to hope for, for my owne part I could wish wee had your “Deophantus,” which was ready for ye press before my departure from you. Those rules of Algebra (though few) which you gave me, and exercise, have made mee able to doe many pretty questions. I entend to reade no Author of that

⁹ Pell's ‘Letters and Papers,’ Bibl. Birch, British Museum, 4278. *Plut.* cvii. D.

subject, untill I may be so happie to reade something of yours. Sir, if there bee anything wherein I might serve you, I desire you to use,

‘ Your thankfull freind and humble servant

‘ WILLIAM PETTY.

‘ Paris, regd. November 1645.’

To Dr. Pell.

‘ Sr,—On Sunday, noone, I received your letter of Friday, together with 9 copies of your Refutation of Longomontanus ; ye which, according to your desire, I have distributed as followeth : viz. To *Golius*, who upon perusall of it, said it was a most solid refutation, thanking you very much, that you remembered him with a copie ; and said withall that hee, at his last beeing at Amsterdam, much endeavoured to have wayted on you there. But he told mee that it is well 30 years since Longomontanus his doctrine, first saw light. Since which tyme he hath by many letters beene advertised of his errour ; but being strangely enamoured with his Invention, could not bee made to retract it, and so hath growne extreme old in his dotage thereon, “Whereas,” said Golius, “it were scarce Religion to trouble ye obstinat old man any more, since other thoughts would better become his yeares than ye mathematicks.” I then went to *Salmasius*, Professor Honorarius, who likewise shewd many tokens of his kind acceptance, and told mee among other discourse, whereof I had much with him, that ye Age of ye Author of this false opinion would sett an Authority on it, and therefore it had ye more need of refutation. *Waleus* thanckes you very much, expressing no faint desires to have ye honour (as hee said it), ye honour of your acquaintance. Mons. de Laet will bee at Amsterdam before my letter. I gave one to *Monsr. de Laet*, but this morning ; for at ye many other tymes that I had formerly beene to wayte on him, I was not so happy as to find him. *Van Schooren* also thancks you, but hee beeing very old and indisposed, I had not much talke with him as I had with ye others. To *Dr. Rypper* beeing a man reasonably

versed in those studies, and not of low esteeme here, I presented one. I have given 2 to *Joncker Horghland*, a Chymist and Physician, Des Cartes his most intimate freind and correspondent, who has promised at his next writing to send one to Des Cartes. And so having retayned only one to shew my freinds up and downe where I goe, I hope they are all disposed of to your mind. If you please to send 12 more, I can dispose them to some other professors, 3 or 4 I would send for England to Mr. Oughtred, Mr. Barlow, and others; if you doe not yourselfe. I judge by the leaves that these copies are part of some booke which you will shortly blesse ye world with, and hope that my Expectation shall not bee in vaine. Now, Sir, I must thanke you for ye honour you have done mee by using mee as an Instrument in this your business. Truly I doe so well like ye employment and so ressent¹ this your favour, That I confesse my selfe obliged to bee

‘Your most affectionate freind and humble servant

‘W. PETTY.

‘Leyden, $\frac{1}{24}$ Aug^t, 1644.’

‘There are some in whom (as in him qui ex pede Herculem, &c.) this your *Magnum Opusculum* hath begotten such an opinion of your meritt, that they resolve to go and live at Amsterdam to receyve your instructions.

‘Endorsed Monsieur Pell.

‘In den oulde convoy	tot
on de Zee dyck.	Amsterdam.’

‘Sr,—According to your desire, I have presented your re-futations to Drs. Spanheim and Herbordus, as also Dr. Wybord, an Englishman and mathematician, with divers others, who doe all accept them very gratefully. As for sending Coppies into England, I shall bee able to doe it to no more than Mr. Oughtred and Mr. Barlow: I thought I could have sent to some others, by the helpe of some Gentlemen my friends, who, having now come from y^e Leagher,

¹ In the sense of the French *ressentir*, to be conscious of.

tell me y^t they know no certayne conveyances these troublesome tymes. The waytyng their comming home to know what they could doe, hath occasioned my so long silence; which I pray you to excuse, and believe that I will attempt an amends of it by all ye offices of an affectionate friend and servant, which I am,

WM. PETTY.

‘Leyden, 8^o Septembr, 1644.

‘Received (9 September).
30 Aug.’

‘Endorsed, Mons. Jean Pell.

‘In den ouden convoie ñ
on de Zee dyck. Amsterdam.’

Friendship with Hobbes, Dr. Pell, and the other learned refugees was, however, no remunerative investment, and William Petty was at times reduced to great poverty. On one occasion, according to Aubrey, he had to live for a week on ‘three pennyworth of walnuts;’ on another he seems to have been arrested for debt. In spite, however, of his sufferings he ultimately returned in 1646 to England with improved means, having increased his 60*l.* to 70*l.*, and paid the costs of his younger brother Antony’s education. His father was just dead, and, according to Aubrey, ‘left him little or no estate.’² His elder brother had also died when quite young.

On his return he seems for a time to have followed his father’s business, and to have been occupied with mechanical inventions to improve it. But he had other and larger ideas. In 1647 he obtained a patent from the Commonwealth for seventeen years for an instrument of his own invention, the prototype of the manifold letter-writer of modern times.³ The use of it, Rushworth says, ‘might be learnt in an hour’s practice; and it was of great advantage to lawyers, scriveners, merchants, scholars, registrars, clerks, &c.; it saving the labour of examination, discovering or preventing falsification, and performing the whole business of writing, as with ease and speed, so with privacy also.’⁴ Petty announced his patent

² *Bodleian Letters*, ii. 481.

House of Lords’ Papers, February 25,

³ *Seventh Report of the Hist. MSS. Commissioners*, p. 11; *Calendar of the*

1648; *Boyle’s Works*, v. 280.

⁴ *Rushworth’s Collections*, ii. 1118.

to the world in a pamphlet on education. 'There is invented,' he said, 'an instrument of small bulk and price, easily made and very durable, whereby any man, even at the first handling, may write two resembling copies of the same thing at once, as serviceably and as fast as by the ordinary way.'⁵ It was at Hartlib's request in 1644 that Milton had published his 'Tractate on Education,' and to Hartlib in the present pamphlet Petty now dedicated his own views. He begins by suggesting the establishment of 'Ergastula Literaria,' or 'Literary Workhouses,' in which children may be taught as well to do something towards their living as to read and write. To these institutions all children of seven years old might be sent, none being excluded by reason of the poverty or inability of their parents. Anticipating later reformers, he proposed that 'the business of education be not, as now, committed to the worst and unworthiest of men; but that it be seriously studied and practised by the best and ablest persons; and,' he goes on to suggest, 'that since few children have need of reading before they know or can be acquainted with the things they read of; or of writing, before their thoughts are worth the recording, or they are able to put them into any form . . . those things, being somewhat above their capacity—as being to be obtained by judgment, which is weakest in children—be deferred awhile, and others more needful for them, such as are in the order of nature before those above mentioned, and are attainable by the help of memory—which is either most strong or unpreoccupied in children—be studied before them.' 'We wish, therefore,' he says, 'that the *educandi* be taught to observe and remember all sensible objects and actions, whether they be natural or artificial, which the *educators* must on all occasions expound unto them . . . as it would be more profitable to boys to spend ten or twelve years in the study of things than in a rabble of words. . . There would not then be so many unworthy fustian preachers in divinity; in the law so many

⁵ 'The advice of W. P. to Mr. Samuel Hartlib for the advancement of some particular parts of learning.'

Hartlib's name is well known to the readers of Milton's prose works.

pettyfoggers; in physics so many quacksalvers, and in country schools so many grammaticasters.’⁶ Some such plan he seems in subsequent years to have proposed to carry out under the name of a Glottical College, but the circumstances of the time were adverse and the scheme was abandoned.⁷ He also wished for the establishment of a ‘Gymnasium Mechanicum,’ or ‘College of Tradesmen,’ to be such that one at least of every trade (the prime most ingenious workman) might be elected a Fellow, and allowed therein a handsome dwelling rent free. From such an institution the projector conceived that all trades not only ‘would miraculously progress and new inventions be more frequent, but that there would also be the best and most effectual opportunities and means for writing a history of Trades in perfection and exactnesse.’ ‘What experiments and stuffe,’ he says, ‘would all those shops and operations afford for active and philosophical heads, out of which to extract whereof there is so little and so bad, as yet extant in the world!’ There was also to be a ‘Nosocomium Academicum,’ or model hospital for the benefit of the scientific practitioner, as well as of the patient. The design concludes with the expression of a regret that no ‘Society of Men’ as yet exists ‘as careful to advance arts as the Jesuits are to propagate their religion,’ and with a suggestion of a work on the lines of Bacon’s ‘Advancement of Learning,’ which should be a treatise on ‘Nature free,’ or on arts and manufactures relieved of restraint, in contrast with a ‘History of Nature vexed and disturbed,’ or of trade under the restraints of the then existing commercial system.

‘I have put into your hands the design of the history of trade,’ Hartlib wrote to Robert Boyle; ‘the author is one Petty, twenty-four years of age, a perfect Frenchman, and a good linguist in other vulgar languages, besides Latin and Greek; a most rare and exact anatomist and excelling in all mathematical and mechanical learning; of a sweet natural disposition and moral comportment. As for solid judgment and industry, altogether masculine.’⁸ Boyle gave him a

⁶ The pamphlet is reprinted in the *Harleian Miscellany*, vol. vi.

⁷ Evelyn’s *Memoirs*, iii. 131, 132.

⁸ Boyle’s *Works*, v. 256–296.

cordial reception, and Petty dedicated the copying machine, or ‘Instrumentum Pettii,’ as it was termed, to him.

In 1648 he entered into an agreement with John Holland of Deptford, as a partner for three years. Holland was to find the money and Petty the brains. The partnership was to be confined, at least in the first instance, to the development of ‘such adventures as Petty had perfected and knew the correctness of, for public good and private advantage,’ more particularly the double writing instrument, a machine for printing several columns at once, a scheme for making a great bridge without any support on the river over which it stands, and other undertakings of the same kind. But there is no record of what the partnership effected.

In October 1649, Antony Petty, who shared the mechanical genius of his brother and was evidently a congenial spirit, died.⁹ The following letter from William Petty to his cousin John, written at the time, shows the difficulties he had to contend with and his desire to assist his family :—

To John Petty.

‘It hath been alwayes my desire and endeavour to help my friends, but it pleased God so to order my fortunes and successses, that as yet I have beene never able to doe much for any of them, how neer so ever they were unto mee, and how great so ever their need was. That “little helpe” which I have done to some of them, I did but by little and little, and with as little hindrance as I possibly could to myselfe, because, God knows, a little hindrance would have made me unable to helpe either myselfe or them any more.

‘My poor brother being departed this life and consequently needing no more of my helpe, I have thought good to propound unto you those considerations, which I have had long in my mind, and wishes of bettering, for a little at leastwise, that uncomfortable condition wherein you live. Now, as I said before, and as I protest before God, the truth is, beeing

⁹ Antony Petty was buried in Lothbury Church on October 18, 1649.

The letter given below is among the Petty MSS.

not able to doe it, either by giving or lending you much money, the way whereby I must doe it is this.

‘ I intend, God willing, so soone as possibly I can, to take the degree of D^r. of Physicke, which being done, it will bee a discredit for mee and consequently a great hindrance to mee, to goe and buy small matters, and to doe other triviall businesses, which I have many times to doe, and being not able to keepe a servant, and withall not having one fifth part of employment enough for a servant, and lastly much of that little business I have being such as I would not acquaint every one with. And now Anthony, who assisted mee in these things, beeing dead, and lastly because I may now againe undertake some of these things, as chymistry and anatomy, whereby I lett him gett somewhat for himselfe, and moreover hearing you much desire to bee about London, I have thought fitt to know whether your desires continue the same. If they doe, these are the helpes which I am in hopes of doing you.

‘ You shall find such clothes of mine and Anthonye’s as I can spare. I will hire you a convenient place to sett up a Tape loome, with a place to sett a still or two in, to do such things as I shall direct you, which you may looke to, while you worke in your loome.

‘ I will doe my endeavours to bring you acquainted with such as may perfect you in the trade of Tape-weaving.

‘ I will lend you 40*l*. towards your loome and other materials for that worke.

‘ If you make good wages and have employment enough about Tape-weaving, I will not take you off from it to doe any thing for mee, unlesse it bee for some greater benefitt.

‘ If you want worke sometimes, you shall make a Sceleton for mee, and worke upon some experiments relating to my inventions, for which you shall have 12^d. per day, whether I gett anything by them or no.

‘ If I undertake anything in Chymistry or Anatomy, whereupon I shall need your assistance, if your assisting mee therein will bee more profit or pleasure to you than your other worke, you shall have the employment ; otherwise not.

‘If any invencion which I set you aboute, take effect, you shall have a share in the benefitt arising from it.

‘If you come to my lodging at mornings, evenings, or any other times of your best leisure, and doe for me such small things as I have to doe either every day or but once in 2 or 3 dayes, as your, my affaires, doe fall out, you shall not loose your labour.

‘In briebe, all the end that I have in you for myselfe, is to have a friend whom I may trust and who is handy, neere about mee. If by God’s providence you can find out any way whereby you may advance yourselfe better than by having any dealing with mee, I shall promote you therein, and bee heartily glad of the occasion.

‘If you please to come upon these tearmes (which in good faith are best, and the best hopes I am able to give you) let mee know it. If I prosper in my wayes, you shall feel it. I onely desire that you would bee cordiall and true to mee, without labouring to circumvent mee, and I shall be as willing to doe for you as you are for yourselfe.

‘You were best to bring you a bed and such things else with you as may bee of use to you here.’

Although the copying-machine had only secured a doubtful success, it made Hartlib and his friends look to the inventor to show himself to the world ‘by some rare piece or other;’¹ and, together with the publication of his ‘Thoughts on Education,’ it greatly extended Petty’s acquaintance among the leading scientific and literary men of the time in England. In 1646, with Hartlib and Boyle, he became a member of the ‘London Philosophical Society.’ This club had been inaugurated in the previous year by Theodore Haak, a German from the Palatinate, and comprised amongst the members the already well-known names of Dr. Wallis and Dr. Wilkins. In 1649 Petty resolved to follow their example, and remove to Oxford,² where Wilkins had just been appointed Warden of Wadham.

The city had surrendered to the Parliamentary army on June 24, 1646, and the University was soon after reorganised

¹ Boyle’s *Works*, v. 264.

² Birch, *Life of Boyle*, p. 83.

under the auspices of the Parliamentary visitors. On March 7, 1649, William Petty became a Doctor in Physic. On June 25 he also entered himself at the College of Physicians in London, after the charge whereof he says: 'I had left about 60l.'³

The situation at Oxford was a strained one. Fortunately for himself, Dr. Petty could not be claimed as an adherent by any of the rival schools of politics and religion which were then disputing the country. In religion his views were of a broad and liberal character. In politics he had been greatly influenced by Hobbes, who at the time was engaged on the preparation of 'The Leviathan' and the smaller work on the theory of government known as the 'De Cive.' One of the principal doctrines of these works, which Hobbes had doubtless instilled into the mind of his pupil, was that in order to preserve social order and civil freedom, which are the main objects of government and the first duty of the citizen, and to prevent the rise of an *imperium in imperio*, the State must not be afraid to assume the right, if necessary, of controlling religion, and must be prepared to resist the pretensions of the clergy—whether Catholic, Anglican, or Presbyterian—to interfere in matters of State and lay hands on the Government. It was in this sense that Hobbes accepted the doctrine of the Divine Right of Kings, or rather of Civil Governments, as the only effectual safeguard against the pretensions of the Roman Church and of authors such as Bellarmine and Suarez. Hobbes, in consequence of the promulgation of these views, had to fly from Paris in 1651; for, however welcome in the abstract his schemes might be to the statesmen of the school of Richelieu and Mazarin, in practice the attack in 'The Leviathan' on the Papal system and on clerical pretensions generally went beyond what the French Government, tolerant as it then was in such matters, could safely allow. But the proposals of the 'De Cive' were also offensive to the small ring of English courtiers and churchmen surrounding the exiled King, with which, up to that time, the author had had very intimate relations, having himself been mathematical teacher to Charles.⁴ Hobbes therefore

³ *Reflections*, p. 17.

1642, and published in 1647 at the

⁴ The *De Cive* was first printed in Elzevir Press at Amsterdam. The

thought fit to make his submission to the Government of the Commonwealth, recognising in the rising authority of Cromwell the hand of a real ruler who could prevent the country being torn to pieces by fanatics, whether Roman Catholic, Anglican, or Presbyterian, and it can hardly be doubted that his conduct had a powerful influence in determining the course of Dr. Petty.

'Sir,' Cromwell had said in 1644, in a letter to Major-General Crawford, one of the Presbyterian commanders of the Scotch army under the Lesleys in the North, 'the State, in choosing men to serve it, takes no notice of their opinions. If they be willing faithfully to serve it, that satisfies.'⁵ As time went on this conclusion seems to have become more and more impressed upon his mind. England, indeed, was still to be the kingdom of God; but the boundaries of God's kingdom were to be extended, and as many citizens as possible were to be allowed to live in peace within the precincts, so long as they did not engage in overt hostility to the Commonwealth and to the established civil and political order—conditions which in any case for the time being effectually excluded Roman Catholics and most of the Anglican churchmen from place and power.

Cromwell, though his own University connection was with Cambridge, had in 1651 been elected Chancellor of the University of Oxford. He steadily protected the two great seats of learning from the attacks of the fanatical party, especially during the brief existence of the assembly known as Barebone's Parliament, from July to December 1653, when the prospect for the Universities was serious. He had appointed two of his chaplains, John Owen and Thomas Goodwin, both men of learning and ability, to positions of importance, and it is probable that through them the name of Dr. Petty may have

English translation appeared in 1651 at the same time as the larger work, *The Leviathan*. On the views generally of Hobbes, and that he was in no sense the mere apologist of tyranny or absolute monarchy, see the remarks of John Austin, *Jurisprudence*, i. 249,

note. On the juridical origin of the doctrine of the so-called Divine Right of Kings, see Maine, *Ancient Law*, p. 346.

⁵ Carlyle's *Cromwell*, i. 201–220, ed. 1846.

become known to him, especially as Dr. Petty, being a person of detached political opinions, belonged precisely to the class of men able to serve, for whom the Protector was looking in the peculiar circumstances of the hour.

Petty had powerful friends in two leading adherents of the Protector in London: Captain John Graunt, who had served with distinction in the war, and was the reputed author of some 'Observations on the Bills of Mortality,' and Mr. Edmund Wylde, a member of Parliament, 'a great fautor of ingenious men for merit's sake,'⁶ and also in Colonel Kelsey, the commander of the Oxford garrison. Thus it came about that he was created a fellow of Brasenose by virtue of a dispensation from the delegates of the University: according to Wood's account, 'because they had received sufficient testimony of his rare qualities and gifts from Colonel Kelsey;' according to Thomas Hearne, because 'he had cut upp Dogges and taught anatomy in the war,' and because the visitors, whom Hearne detested, liked 'to put out loyal persons in order to put him and such others in.'⁷ He was also appointed Deputy to the University Professor of Anatomy, Dr. Clayton. The Professor himself, oddly enough, had such an insurmountable aversion to the sight of a mangled corpse, that he eagerly availed himself of his substitute's ability as an operator. 'Anatomy,' says Aubrey, 'was then little understood by the University, and I recollect that Dr. Petty kept a body that he brought by water from Reading, a good while to read on, some way preserved or pickled.'⁸

In 1650 an event occurred which made his name known in the whole country and opened up the way to a larger career. One Ann Green had been tried, convicted, and executed at Oxford on December 14, 1651, for the murder of her illegitimate child. Her execution seems to have been carried out with a combination of clumsiness and brutality charac-

⁶ *Bodleian Letters*, ii. 483.

⁷ Wood's *Fasti Oxon.* ii. 156. Hearne's *Diary*, Oxford edition, edited by W. C. E. Doble, i. 78. Wood says that Colonel Kelsey had been 'a godly button-maker' in London. He was afterwards pro-

moted to several places of trust by Cromwell. An entry of September 12, 1650, in the college books, records Dr. Petty's election as a fellow of Brasenose.

⁸ *Bodleian Letters*, ii. 483.

teristic of the times. It was observed 'by the spectators that she seemed to take an unconscionable time in dying, so her friends went to assist her in getting out of this world, some of them thumping her on the breast, others hanging with all their weight upon her legs, sometimes lifting her up and then pulling her down again with a sudden jerk.' At length the Sheriff was satisfied, and the unfortunate woman was certified to be dead. The body was then cut down, put into a coffin, and taken to the dissecting room. When, however, the coffin lid was opened she was seen to be still breathing and to 'rattle,' 'which being observed by a lusty fellow who stood by, he, thinking to do an act of charity in ridding her out of the reliques of a painful life, stamped several times on her breast and stomach with all the force he could.' Just at this moment, however, Dr. Petty and Dr. Wilkins appeared on the scene, and recognising distinct signs of life, decided to attempt to revive the supposed corpse. They wrenched open Ann Green's teeth, poured cordials down her throat, and persuaded a woman to go to bed with her to restore warmth. Signs of life soon began to appear; the doctors bled her, ordered her a julep, and so left her for the night. In two hours she began to talk. The dead had come to life.⁹ Though legally defunct, she is said to have survived to marry and become the mother of children, in spite of the Sheriff and to the confusion of the hangman.

Soon after this exploit Dr. Petty was made Vice-Principal of Brasenose, and succeeded Dr. Clayton in the Chair of Anatomy, the duties of which he had practically been for some time performing, 'upon Dr. Clayton renouncing his interest therein purposely to serve him.' He delivered his inaugural lectures on March 4, 1651, in Latin, as the custom then was. He took for his subject the growth and present position of the science of medicine, a large subject, as the Professor started by acknowledging. 'Ego equidem optarem,' he went on, 'ut

⁹ See *News from the Dead: or a true and exact narration of the miraculous deliverance of Ann Greene,*

Oxford 1651, reprinted in the *Phoenix Britannicus*, i. 233; *Evelyn Memoirs*, ii. 401; *Bodleian Letters*, ii. 483.

omnia qua habeam in scientiis laudabilia, quæ puto quam sint exigua, in unum quasi pilulam condensare et coaptare possem, quam vobis lubens offerrem, ut non magis honorificam de meipso sententiam extorqueam, quam ut vobis, quantum potero, prodessem.'¹

He had now saved about 500l.² From 1648 to 1651 he continued to reside at Oxford, occasionally visiting London; and, through the interest of Captain John Graunt, he received the appointment of Professor of 'Music' at Gresham College, which at that time had not yet become the *caput mortuum* into which it has since degenerated.³

'At Oxford,' says Aubrey, 'he was beloved of all ingenious scholars,' his especial allies, besides Dr. Wilkins, Dr. Wallis, and Boyle, being Seth Ward, celebrated afterwards as the energetic but rather peculiar Bishop of Salisbury; Antony Wood, President of Trinity College; Dr. Bathurst, Dr. Goddard, and Mr. Christopher Wren—men of varied tastes and still more various opinions, whom the love of science and original research brought together.⁴

In these stormy times they used, for the convenience of inspecting drugs, to meet at Dr. Petty's lodgings at an apothecary's house, as he was acknowledged to bear away the palm from all competitors in the experimental side of natural philosophy; and also in those of Dr. Wilkins of Wadham,⁵ which was 'then the place of resort of virtuous and learned men.' 'The University,' says the earliest historian of the Royal Society, 'had at that time many members of its own, who had begun a free way of reasoning; and was also frequented by some gentlemen of philosophical minds, whom

¹ *Notes of the Lecture*, Petty MSS.; Wood, iv. 215.

² *Reflections*, p. 17.

³ See Ward, *Lives of the Professors of Gresham College*, 1740, p. 218, article 'Petty.'

⁴ Sprat, *History of the Royal Society*, p. 55.

⁵ Birch, *History of the Royal Society*, i. 2; *Life of Boyle*, p. 84; Sprat, *History of the Royal Society*,

pp. 53. In his will Sir William Petty, alluding to this period of his life, speaks of his connection with clubs of the 'Virtuosi.' This, in the printed copies, has been transformed into 'virtuous,' and W. L. Bevan observes that the author of the article 'Petty,' in Ersch and Grueber's *Encyclopædia*, founds on it a statement that Petty took an active part in the religious movements of the time.

the misfortunes of the kingdom and the security and ease of a retirement amongst gownsmen had drawn thither. Their first purpose was no more than only the satisfaction of breathing a freer air, and of conversing in quiet with one another; without being engaged in the passions and madness of that dismal age. . . . For such a candid and unimpassionate company as that was, and for such a glorious season, what could have been a fitter subject to pitch upon than natural philosophy? To have been always tossing about some theological question would have been to have made that their private diversion, the excess of which they themselves disliked in the public. To have been eternally musing on civil business and the distresses of the country was too melancholy a reflection: it was nature alone which could pleasantly entertain them in that estate.’⁶

In the spring of 1651, Dr. Petty obtained leave of absence from the college for two years, with an annual stipend of 30*l.* continued to him. His exact occupation in the months that succeeded is doubtful. He was probably engaged in travel, but whatever his ultimate intentions may have been, they were suddenly diverted into an unexpected channel, for, at the end of the year, he received the appointment of Physician-General to the army in Ireland, and to General Ireton, the Commander-in-Chief. He landed at Waterford on September 10, 1652, but found Ireton dead from the effect of fever and sickness, contracted at the siege of Limerick. He, however, received the same appointment from Ireton’s successors, General Lambert and General Fleetwood, at a salary of 365*l.*, and 35*l.* out of ‘the State’s apotheca,’ and without being debarred from private practice.’⁷

Boyle had preceded him across the Channel. He was the owner of an estate which required attention. Ireland he found ‘to be a barbarous country, where chemical spirits were so misunderstood and chemical instruments so unprocurable, that it was hard to have any Hermetic thoughts in it.’ The arrival of Dr. Petty was consequently very welcome

⁶ Sprat, *History of the Royal Society*, pp. 55–56.

⁷ Will of Sir William Petty. See Appendix.

to him, and he describes how in the course of experiments in anatomy, which they at this time carried out together, 'he had satisfied himself of the circulation of the blood, and the freshly discovered *receptaculum chyli*, made by the influence of the venæ lacteæ; and had seen, especially in the dissection of fishes, more of the variety of the contrivances of Nature and the majesty and wisdom of her author, than all the books he ever read in his life could give him convincing notions of.'⁸

Dr. Petty had not been long at his official post before, to quote his own words, he observed 'the vast and needless expense of medicaments, and how the Apothecary-General of the army, with his three assistants, did not spend their time to the best advantage; and forthwith to the content of all persons concerned, with the State's bare disbursement of 120*l.*, he did save them 500*l.* per annum of their former charge; and furnished the army, hospitals, garrisons and headquarters, with medicaments, without the least noise or trouble, reducing that affair,' as he claimed, 'to a state of easiness and plainness which before was held a mystery, and the vexation of such as laboured to administer it well.'

A more important task, however, than the reorganisation of the medical service of the army was before him, and one which determined the future course of his life.

The Civil War was over, and Ireland lay prostrate under the heel of the conquerors. 'It was hoped that it would be possible to regulate, replant, and reduce the country to its former flourishing condition;'⁹ and the Lord Deputy Fleetwood resolved to call on Dr. Petty to bring his scientific attainments and organising powers to aid in the vast undertaking.

⁸ Boyle's *Works*, v. 242.

⁹ *Down Survey*, ch. i. pp. 1-3.

CHAPTER II

THE DOWN SURVEY OF IRELAND

1652-1658

Condition of Ireland in 1652—The forfeited estates—The Grosse Survey—Vincent Gookin—The transplantation into Connaught—Massacre of the Waldenses—The Civil Survey—Dr. Petty's proposals—The Down Survey—The Map of Ireland—Letter to Boyle—Dr. Petty's method of work—The Army Survey commenced—Disputes with the army—The Army Survey finished—Distribution of the army lands—The 'Adventurers' Survey—Opinion of Clarendon—The Survey maps.

THE actual fighting in Ireland had terminated with the fall of Limerick and Galway; and when Dr. Petty arrived in 1652, the population which had escaped the sword, or had not fled the country, was anxiously awaiting the decree of the conquerors.

Acting, it has been said, on the suggestions of Harrington, the author of 'Oceana,' and probably influenced by the example of the extirpation of the princes and kings of Canaan by the chosen people of God, and by the success of the plantation of Ulster in the reign of James I., the Government of the Commonwealth had resolved on a vast scheme for colonising the country with new settlers, in order thereby to secure the English connection, as it was thought for ever.

Before the actual commencement of hostilities between the King and the Parliament, 2,500,000 acres of Irish land had been pledged, in 1642, to those who should 'adventure' the money necessary in order to raise an army to put down the rebellion of the native Roman Catholic population. One of the last acts in which Charles concurred with his Parliament was in giving the Royal assent, however unwillingly, to this

measure, which in the clauses relating to finance and those limiting the exercise of the royal prerogative of pardon, bore the impress of the suspicions of the Parliamentary leaders, that the sympathies of the King were as much with the Irish rebels, in whom he saw possible allies, as with his own army, in whom he recognised probable foes. The force so raised, however, never crossed St. George's Channel at all, for the funds, having found their way into the Parliamentary treasury, were used for equipping the armies of Essex and Manchester, which fought at Edgehill and Newbury. Subsequently fresh advances were made; and owing to the ever-increasing necessities of the Commonwealth, the adventurers, under the 'doubling ordinance,' became entitled to receive double the original allotment for an increase of one-fourth in the amount advanced.¹

When Ireland was finally conquered, it was by a portion of the New Model Army of Cromwell and Fairfax, aided by some Royalist regiments which, after the second flight of the Marquis of Ormonde, took service with the Commonwealth against the native rebellion. The arrears of pay to all these regiments formed a second category of the obligations of the Government, and it was proposed to satisfy them out of Irish lands at 'adventurers' rates.' The debt due to the latter was 360,000*l.*; that due to the army was put at 1,550,000*l.* A third category of creditors consisted of a number of persons who had advanced money on various occasions to help the necessities of the Commonwealth, or to whom money was owing for salaries and otherwise.

The whole matter had been dealt with by an Act passed on August 12, 1652, and by two Orders of Council of June 1 and June 22, and a set of further instructions of July 2, 1653; all ultimately recited and incorporated in an Act of Parliament, passed on September 26, in the so-called 'Little Parliament.'² The Church and Crown lands were thereby

¹ See Scobell's *Ordinances*, pp. 21, 26-37. See also *Commons' Journals*, ii. 420-425; *Lords' Journals*, iv. 593-607.

² The Acts of Parliament referred to are to be found in Scobell's *Ordinances*, 1650-1653, pp. 196, 240.

appropriated to the use of the Commonwealth, and also the estates of all proprietors who, having lived in Ireland during the recent troubles, could not prove that they had shown 'constant good affection.' This meant in practice the confiscation of the estates of all the heads of the ancient Roman Catholic native population, and of most of the old Anglo-Irish nobility, some Roman Catholics, some Anglican Churchmen, but all more or less involved in resistance to the Commonwealth, with but few exceptions. They were bidden to migrate across the Shannon into Connaught, unless they preferred to go abroad, which by a liberal system of subsidies they were encouraged to do. Dr. Petty calculated that 34,000 of the best fighting population—the chiefs and the 'swordsmen'—had accepted the alternative and had fled the country:

'Amazement in the van with flight combined,
And Sorrow's faded form and Solitude behind.'

The Presbyterians in Ulster and the English merchants in the walled towns, who mostly belonged to that religious connection, fared little better than the Roman Catholic landowners. They were indeed the ancient enemies of prelacy, but their sympathies were known to have been with the Scotch army, which the Independents had recently defeated at Dunbar and destroyed at Worcester. They were, therefore, ordered to make way in favour of the victors. Thus the whole of the upper and middle classes of Ireland were crushed in a common ruin. So entirely had the original inhabitants, except the poorest, been driven out of Dublin, that it was next to impossible to find a Roman Catholic physician or even a Roman Catholic midwife, and Dr. Petty with other medical men was ordered 'to consider of the evil and propose a remedy.'³

With a view to the distribution of the forfeited lands to the creditors of the State, a survey and measurement was contemplated by the Act. The debt due to the 'adventurers' was primarily charged on the forfeited lands in the moieties

³ Prendergast, p. 139; Thurloe, v. 508.

of ten counties, which were to be divided equally by them with the soldiers, as it was considered that peaceable possession would be thereby secured to the civilian owners, viz.: Waterford, Limerick, Tipperary, Meath, West Meath, King's County, Queen's County, Antrim, Down, Armagh, and on the whole county of Louth as an additional security. The arrears of the soldiers were charged on the forfeited lands in the remaining halves of the above counties, and in the counties of Derry, Tyrone, Fermanagh, Cavan, Monaghan, Wexford, Kilkenny, and Kerry.

The Government reserved to themselves all the walled towns, all the Crown and Church lands, the tithes, and the forfeited lands in the four counties of Dublin, Kildare, Carlow, and Cork for distribution among distinguished supporters of the Parliamentary cause, and to satisfy public debts. The adventurers were to be satisfied next, and then the army. Of the adventurers' debt, 11,000*l.* was charged on Munster, 205,000*l.* on Leinster, and 45,000*l.* on Ulster; and it was settled that on July 20, 1653, a lottery was to be held in Grocers' Hall, London, the lots to decide first in which province each adventurer was to have his allotment, and then in which of the ten counties it was to fall. The lots were not to exceed, in Westmeath, 70,000*l.*; in Tipperary, 60,000*l.*; in Meath, 55,000*l.*; in King's and Queen's Counties, 40,000*l.* each; in Limerick, 30,000*l.*; in Waterford, 20,000*l.*; in Antrim, Down, and Armagh, 15,000*l.* each.

Connaught had originally been reserved in its entirety for the Irish owners, but subsequently Sligo and part of Mayo and Leitrim were taken away from the Irish and allotted to a part of the army which had fought in England in the recent campaign, and was still unpaid. When these transactions were concluded, the proportion of land forfeited in Connaught was found to exceed that in the remaining provinces of Ireland.¹ Donegal, Leitrim, Longford, and Wicklow were given to the garrisons of the Munster cities, which, before 1649, had served the King, and, after the defeat and the departure of the Marquis of Ormonde, had passed from the Royal to the Parliamentary

¹ Hardinge, p. 34.

cause. Certain special reservations were also made in Dublin and Cork for maimed soldiers and the widows of those who had perished in the war; and well-affected Protestants and English owners, who might wish to leave Connaught in consequence of the Irish transplantation, were offered the opportunity of receiving lands of equal value on the left bank of the Shannon.

Such was the general scheme in outline, but large powers of adjusting details were left to the Irish Council of State, which was entrusted with the execution of the Act. The formation of an Army Commission, to distribute the lands to the soldiers when the survey was finished, was provided for by the Act.

It was one thing, however, to make a general arrangement of this kind, it was another and far more difficult task to carry it out. A survey and map was the first thing needed, but surveying was an infant art, and nothing of the kind existed, except in Tipperary and in some parts of Connaught, where, during the reign of Charles I., Strafford had instituted and partly carried out a survey.

There were said to be 35,000 claimants of land in all, and the Act settled nothing, except that 1,000 Irish acres, equal to 1,600 English measure, in the counties situate in Leinster were to represent 600*l.*, in the counties situate in Munster 450*l.*, and in those situate in Ulster 300*l.* of debt; the Act rates being 12*s.* per Irish acre in Leinster, 8*s.* in Munster, and 4*s.* in Ulster, the latter being considered the poorest of the three provinces.

In the period between the end of the war and the year 1653, rough lists of the proscribed had been drawn up, and courts had been held to determine who could clear themselves of the charge of conspiracy in the late rebellion, and prove constant good affection. But a large category of 'dubious lands,' as they were called, still remained, which awaited a further and final inquiry, and these both the army and the adventurers were now clamorously demanding should at once be assigned to them. The army also confidently expected that if the adventurers were satisfied first, a large surplus

would remain, which they could in that case claim for themselves, and their eyes specially turned to the rich lands of the County Louth, part of which they hoped would ultimately fall to their share. Meanwhile, like the adventurers, the army proceeded to draw a first 'lot,' in order to decide in which province each regiment was to receive their share of the 'satisfaction.'

The amount of army arrears being ascertained and the amount of acres they represented, partial attempts had been made in 1653 to distribute lands amongst some of the regiments,⁵ but an accurate method for identifying each lot drawn with any particular parcel of land on the spot was wanting. Quartermaster-General Goulding, for example, might have a debt of 232*l.* 14*s.* 9*d.*, which, calculated at the army rates in Connaught, was worth in the County of Sligo 465 a. 1 r. 24 p.; but how was Quartermaster-General Goulding to know where his particular 465 a. 1 r. 24 p. exactly lay, and prove his title against all comers to enter on those lands and no others, and keep them on a secure title; and how was he, on the other hand, to prove that he had not obtained a great deal more than he was entitled to by force and impudence, or by fraudulent or incompetent measurements?

Owing largely to the weakness of Fleetwood, the violence of the officers of the army in Ireland, stimulated by personal greed and cloaked by religious pretensions, had reached such a point by the end of 1653, that the Protector determined on a complete change of administration, and sent over Henry Cromwell on a mission of inquiry, intending that he should ultimately replace Fleetwood, who was under the influence of the military and fanatical party. It was also determined to institute a general scheme of survey and apportionment as the Act directed. The first plan set on foot was to make what was termed a 'Grosse Survey,' or list of forfeited lands in each barony, with brief descriptive notes. Maps were directed to accompany this survey, and some undoubtedly were made.⁶ But the work, which was commenced in August 1653, proceeded very slowly, and when the results

⁵ See Prendergast, p. 86.

⁶ Hardinge, p. 11.

began to be seen, was at once attacked, by some for want of accuracy, by others for the interminable time which it seemed likely to occupy before completion; and it was also generally criticised for the manner in which it appeared to be carried out for the benefit of powerful individuals.

The Surveyor-General, Benjamin Worsley, had arrived in Ireland at the same time as Dr. Petty. He also was a member of the medical profession, but what were his qualifications as a surveyor does not precisely appear. Dr. Petty described him as one who 'having been frustrated as to his many severall great designs in England hoped to improve and repaire himselfe upon a less knowing and more credulous people. To this purpose he exchanged some dangerous opinions in religion for others more merchantable in Ireland, and carried also some magnifying glasses,' by means of which Dr. Petty, who seems to have underrated his abilities,⁷ says he impressed an ignorant public with a vast idea of his scientific attainments. He was a dealer in schemes for a universal medicine, for making gold, sowing saltpetre, establishing a universal trade, taking great farms, and other visionary plans, all of which excited the wrath of the practical and scientific mind of Dr. Petty, who described them as 'mountain-bellied conceptions.'⁸

The scheme of survey attempted by him, so far as it was carried out, was to make a survey of forfeited lands only, without any reference to the civil territorial limits; and barren land was to be excepted from it, unless included by situation within the area of profitable land.

The payment was to be in proportion to the area surveyed, at the rate of 40s. per 1,000 acres of land, whether profitable or unprofitable. Dr. Petty at once perceived the defects which lay on the face of Worsley's plan. The rate of payment, in Dr. Petty's opinion, was excessive. There was also no check on the returns of the surveyors, and it was open to question whether the instructions to them complied in several respects with the

⁷ See Sir Thomas Larcom's opinion, *Down Survey*, p. 320, note.

⁸ *Reflections*, p. 107. Worsley is

mentioned by Boyle in a letter printed in his works, vol. v. p. 232, where the saltpetre experiment is alluded to.

Act of Parliament on which they were founded. The men employed, Dr. Petty said, were not 'skilled artists' at all, but mostly, as he thought, 'conceited and sciolous persons,' at whose proceedings Worsley, whether from pride or ignorance, or actuated by worse motives, winked, with the approbation, as Dr. Petty believed, of his influential and highly-placed patrons.

Dr. Petty, in fact, suspected the Surveyor General of being as inefficient in his profession as the recently discomfited Apothecary-General had been proved to be in his purchase of drugs, and he expressed his opinion, as to these 'mis-carriages,' to Worsley himself, and proceeded to 'admonish him,' recommending him 'skilled artists' for his work. Worsley did not relish his advice, and preferred that of his own nominees—persons whom Dr. Petty termed 'mere bulks and outsides.' The quarrel deepened, and Dr. Petty came to the conclusion that Worsley was dishonest as well as ignorant.

The first great disbandment of the army took place in 1653, and some distributions were actually made in 1654 to those who were most clamorous. These Dr. Petty impugned at once, believing that the public was being robbed; and he proceeded, as he says, to attempt to persuade 'several sober and judicious persons in the businesse, that the way of Survey the State was upon was a mistake.'⁹ He found a willing listener in Henry Cromwell, who, from the time of his first arrival in Dublin on his mission of inquiry, had become the object of the attacks and misrepre-

⁹ 'The first survey or old measurement was performed by measuring whole baronies in one surround, or perimeter, and paying for the same after the rate of 40 sh. for every thousand acres contained within such surround; whereby it followed that the surveyors were most unequally rewarded for the same work, viz. he that measured the barrony of 160,000 acres did gaine neare five times as much per diem as he that measured

the barrony of 8,000 acres. Besides whereas 40 sh. were given for measuring 1,000 acres, in that way, 5 sh. was too much—that is to say, at 5 sh. per 1,000, a surveyor might have earned above 20 sh. per diem cleare, whereas 10 sh. is esteemed, specially in long employments, a competent allowance.'—'Brief Account,' p. xiii. *Down Survey*, ch. ii. p. 3. Henry Cromwell to Oliver Cromwell, October 9, 1655, Thurloe, vi. 74. Ludlow, i. 360.

sentations of the powerful Anabaptist faction with which the Protector was at this moment wrestling in England. Henry Cromwell, unable to conceal his disgust at high pretences of religion combined with an almost unlimited rapacity in the affairs of this world, resolved, after trying to stave off a quarrel as long as possible, to risk a formal rupture.¹ 'Men,' he wrote to Secretary Thurloe, 'have taken that from the State for which they paid 20*l.* p.a. rent, and have immediately let it out again for 150*l.* per a.; and, Sir, this is to be made good in above 40 particular instances; and 'tis feared that all your lande in Ireland is let at this rate. I know three men that took 18,000 acres of the Commonwealth's land in the County Meath for 600*l.* p.a., and let it out again for 1,800*l.* Sir, and these were Commissioners instructed with letting your landes. Another let to himself being a Commissioner, for 400*l.* p.a., and the State to bear the contribution, that which was at the same time let by the State for 800*l.*, the country being at the same time as well stocked and planted as it is now.'²

Other difficulties involving a different set of considerations were also arising. The transplantation of the native Irish into Connaught had not been adopted without considerable doubts in many quarters, both in England and in Ireland, as to the soundness of the policy. Vincent Gookin, member for Kinsale and a Privy Councillor, was the mouthpiece of the opposition. He was the son of Sir Vincent Gookin, in former years a constant opponent and unsparing critic of Strafford in the government; and from his father—reputed in his time the most independent man in the country—he had inherited a bold heart and a ready pen. He was the special adversary of the rule of petty military despots, whether Irish or English. Dr. Petty, himself sprung from the middle rank in life, was willing enough, like Gookin, to see the power of the old military chiefs broken and their strongholds wasted; but to decree the practical ruin of the whole population and to replace them by a body of English officers, was, he agreed with Gookin, a different affair, and they jointly prepared a

¹ Thurloe, ii. 149; iv. 373.

² *Ibid.* iv. 509.

- ‘ Discourse against the transplanting into Connaught,’³ declaring it on public grounds a wasteful transaction and contrary to sound policy.

‘ Mercy and pardon ’ as to life and estate had indeed been decreed in favour of ‘ all husbandmen, ploughmen, labourers, and artificers,’⁴ and others of the inferior sort ; for the chosen people, it was recollected, had found the Gibeonites useful in Palestine as hewers of wood and drawers of water. But all the landowners who had not fled over sea, and their retainers, were to cross the Shannon. Many had already fled the country. The land was already free from the old Irish military party. Nobody at least could deny that. ‘ The chiefest and eminentest of the nobility, and many of the gentry, have taken conditions from the King of Spain, and have transported 40,000 of the most active spirited men, most acquainted with the dangers and discipline of war.’ Such is the grim epitaph of the ancient chiefs and nobles, which the authors of ‘ The Discourse ’ recorded in their book. Some went to France and enlisted in the royal armies, others took service with the King of Spain and the King of Poland. Europe was full of Irish Roman Catholic exiles eager for revenge. The widows and orphans, the deserted wives and families of the ‘ swordsmen,’ experienced a worse fate. They were kidnapped and shipped wholesale into the West Indies, the slave-dealing merchants of Bristol achieving a pre-eminence in the nefarious traffic, which their previous experience enabled them to organise with

³ Lansdowne MSS., British Museum, 822, l. 26–27, October 21, 1656 ; Prendergast, pp. 54–64 ; also the articles ‘ Gookin ’ in *Dictionary of National Biography*. The pamphlet referred to above is entitled *A Discourse against the Transplantation into Connaught*. Two editions were published, both anonymously, in London, in January and March 1655. Dr. Petty acknowledges his share in the authorship in a list of his works found amongst his papers (see Appendix), where it is mentioned under the title of *A Discourse against the Transplanting*

into Connaught, 1654. The published book bears the marks of joint authorship, the opening sentences—an elaborate medical comparison between the State and the human body—being altogether in Petty’s style, as well as the later portions, where the arguments are of exactly the same general character as those in the *Political Anatomy of Ireland*, ch. iv.

⁴ Preamble of the Act of 1650 : Scobell, ii. 197 ; Proclamation of October 11, 1652, Prendergast, pp. 27–28.

advantage and profit to themselves. Unmerciful passion blinded every religious party, with a few trifling exceptions and with only differences in degree, to the teachings of the gospel of justice and mercy, of which each professed to be on earth the special representative. But even in the seventeenth century, and amid the tumult of conflicting religious animosities, the voice of human nature could occasionally make itself heard; and the views of Gookin and Petty, neither of whose characters were exactly cast in a sentimental mould, found an echo in England.

‘The cause of the war,’ Petty said, ‘was a desire of the Romists to recover the Church revenue, worth about 1,100,000*l.* per annum, and of the common Irish to get all the Englishmen’s estates, and of the ten or twelve grandees of Ireland to get the Empire of the whole.’⁵ These grandees had led the Irish people into the troubles out of which they themselves emerged defeated and ruined. But admitting this, and admitting also, as Vincent Gookin and Petty both did, that in consequence ‘it was for the security of the English and the English interest to divide the Irish one from the other, especially the commonalty from the chiefs,’ they argued that it was not, therefore, necessary to drive out also all the proprietors who could not prove ‘constant good affection.’ Further, the peculiar constitution of Irish society and of the land system must, they saw, cause an enormous mass of their dependents, their tenants, their retainers and labourers, to be driven out with them, notwithstanding the exemptions of the Act; and it was therefore not true to say that only proprietors and men in arms were being ordered to go.

The authors of the rebellion and massacres, those who had led the people to commit the atrocities which had so deeply stirred the public conscience, ‘the bloody persons,’ were, Gookin and Petty argued, ‘all dead by sword, famine, pestilence, and the hand of civil justice; or remain still liable to it; or are fled beyond sea from it; the priests and soldiers (the kindlers of the war in the beginning and fomenters of it since) are, for the first, universally departed the land, and for

⁵ *Political Anatomy*, ch. iv. p. 317.

the second, to a vast number and the most dangerous; and the remaining are weary of war, having long since submitted; and those that are out sue for nothing but mercy. For the poor commons the sun never shined, or rather not shined upon a nation so completely miserable. There are not 100 of them in 10,000 who are not by the first and fourth articles of the Act of Settlement under the penalty of losing life and estate. The tax sweeps away their whole existence. Necessity makes them turn thieves and Tories, and then they are prosecuted with fire and sword for being so. If they discover not Tories, the English hang them; if they do, the Irish kill them.' It was possible, no doubt, to reply with Colonel Lawrence, who published an answer, that technically no promiscuous transplantation was intended; but a promiscuous transplantation was none the less going on, and that it would not even have the merit of success, was the opinion of the two critics.⁶ 'The unsettling of a nation,' they pointed out, 'is an easy work; the settling is not,' and the transplantation could have but one result—the permanent mutual alienation of the English and the Irish, and the division of the latter between a large discontented garrison beyond the Shannon and scattered bands of pillaging Tories on this side of the river. Such bands were already sufficiently numerous, owing to the heavy taxes and to 'the violence and oppression of the soldiery,' which had driven even loyal men into rebellion and despair. A settlement of the country, they fully admitted, was obviously needed; but it should have for object to detach the people of the country from lawless courses, instead of driving them into madness by injustice.

The anomalous result of the rates of distribution under the Act was another matter which had struck Henry Cromwell. At the existing rates he saw that 'one might have a thousand acres worth more than 1,000*l.*, and another in the same barony a thousand acres not worth 200*l.*' The great desideratum of Ireland, he reported home, was to secure

⁶ *The Interest of England in the wealth's, (Col.) Richard Lawrence, Irish Transplantation stated by a* London, March 9, 1655 (British Museum).
Faithful Servant of the Common-

honest commissioners and incorrupt judges; but it was next to impossible to find either. Meanwhile, the Exchequer of the Commonwealth, both in England and Ireland, was empty, and the financial situation critical in the extreme. Some decisive step evidently had to be taken, and on September 6, 1654—while Fleetwood was still at Dublin—an order appeared from the Commissioners of the Commonwealth of England for the affairs of Ireland, stopping the further progress of the Survey, and prohibiting the distribution of lands under it.⁷

A crisis had arrived. A new set of instructions was drawn out for the Lord Deputy and his Council. They were ordered to devote their whole care to improving the interest of the Commonwealth; they were to provide for the advancement of learning, to try to establish the finances of the country on a sound basis, and while maintaining true religion and suppressing idolatry, popery, superstitions, and profaneness, they were given full power to dispense with the orders of the late Parliament and Council of State for transporting the Irish into Connaught, if, on full consideration, it should prove for the public service to do so.

The prospect was fair. But now occurred one of those fatal and unforeseen coincidences which dash the cup from the lips of expectation and destroy the plans of statesmen. In the midst of the events just described, the news arrived, with all the harrowing details, of the enactment in the South of Europe of even worse horrors than those which were being perpetrated in Ireland; with this difference only, that the part of persecutor and persecuted was reversed.

In 1650 the congregation 'de Propagandà Fide' had established a local council at Turin. Duke Charles Emmanuel II. of Savoy yielded to the Jesuits, and an order was issued that the Protestants, known as Waldenses in the Alpine valleys which converge near Susa, should be exterminated. Measures were concerted with France, and an attack from both sides of the mountains was arranged for 1653; as in a matter of this kind it was desirable, in the opinion of

⁷ Thurloe, ii. 413, 506; vi. 810, 811, 819.

France, to make concessions to the Pope. A large body of the Irish refugees, who had just entered the Spanish service, were at the moment discontented with the terms of their enlistment, and resolved to pass over the Pyrenees. Attracted by the promise of pay and plunder, they made thence for Italy. On their march they were said to have vaunted 'that they had massacred the English Protestants in Ireland,' and that they would 'now tear in pieces and crucify quick any of the religion' they might find elsewhere.⁸ Early in January 1654 they were near Nimes, one of the principal Protestant cities of France, and owing to these boasts they were not allowed to come within the walls. Thence they passed on into Piedmont, and took service with the Duke. Soon the barbarities which, with other soldiers of fortune, they exercised against the unoffending inhabitants of the Alpine valleys, were a household word in every Protestant home in Europe. The adversaries of the Irish confiscations were now swept away in a fierce torrent of national indignation, and the nascent feeling of pity, which was beginning to make itself felt in England, was rudely crushed. 'The distressed and afflicted people of God,' the officers in Ireland wrote in a memorial to the Protector, 'have so bitter a portion, even a cup of astonishment, put into their hands to drink by that scarlet strumpet who makes herself drunk with the blood of the saints, because they refuse to drink of the wine of the fornication. What peace can we rejoice in when the whoredoms, murders, and witchcrafts of Jezebel are so mighty?'⁹ An Irish plot, fomented by the Jesuits, to murder the Protector was also suspected. Two of the ambassadors of the Commonwealth, Dr. Dorislaus and Antony Ayscam, had actually fallen under the knives of assassins abroad.

The atmosphere was heavy with anxiety. Dr. Petty relates how, at Dublin, in the midst of the controversies about the settlement of the country, 'his Excellency, the Lord Deputy, meeting in the Castle with several officers of the army, they together did resolve freely to contribute and

⁸ Thurloe, i. 587 ; ii. 27.

⁹ *Ibid.* iii. 466.

subscribe towards the relief of the distressed Waldenses;'¹ and that the officers voluntarily agreed to give a fortnight's pay and the private soldiers one week's pay, and many still larger sums. The Cavaliers and the Irish were regarded as engaged in one evil business. 'The latter,' said Fleetwood, 'are an abominable, false, cunning, and perfidious people.'² . . . 'As to what you write concerning our transplantation here,' he told Thurloe, 'I am glad to understand you have a good sense of it; though it hath been strangely obstructed and discouraged by the discountenance it hath received from England. There is no doubt as bad, if not a worse, spirit in these people than is in those of Savoy. We are on the gradual transplantation, though the hopes the people have from England of a dispensation makes them keep off, and not transplant so readily as otherwise they would, if their thoughts were free from expectations out of England.'³

The transplantation, it was now resolved, was to be proceeded with. In vain did Gookin go over to London and publish his book there. 'A scandalous book,' Fleetwood wrote to Thurloe. In vain did he make a particular protest to the Protector on behalf at least of the 'ancient Protestants,' whose case was peculiarly hard, and might have been expected to excite commiseration in the minds of their co-religionists. Exasperation and personal greed were together too strong, and the fatal order was issued.

But it was at least possible, though the policy of transplantation was not to be altered, to prevent a carnival of jobbery and confusion in connection with it. The Council accordingly announced the adoption of a new plan, which was entirely to supersede the former survey. It was decided to make a preliminary inquisition over the whole country and to prepare accurate lists of the forfeited lands; and the work of surveying was to be entirely separated, at least for the time, from that of mapping.

Thus was set on foot the 'Civil Survey,' so called because it was carried out by the civil authorities and not by soldiers.

¹ *History of the Down Survey*, ch. ix. p. 66.

² Thurloe, ii. 343.

³ *Ibid.* iii. 468.

Like its predecessor, it was in substance a gross or estimate survey. Commissions were issued to bodies of commissioners for each county, except where the survey made in Strafford's time already supplied a sufficiently accurate account of the lands in the district, their area, value, and ownership. It was to comprehend not only the forfeited lands, but all other estates and interests belonging to the State as successor to the Crown, and was in fact an attempt to make a land register.⁴ 'This improved and most important descriptive survey,' says Mr. Hardinge, 'was not intended for the sole purpose of supplying lists of lands to be measured and mapped and then cast aside as useless, as would be the result had it related to forfeited lands only; but it comprehended all other estates and interests—the Crown's hereditary estates, ecclesiastical and unforfeited, corporate and lay estates and possessions. Many persons are under the impression that the civil survey was designed as the basis of the satisfactions afterwards made to the soldiers for arrears of pay due to them, and that it was rejected by the Government in consequence of the complaints of its inaccuracy. Such an impression is altogether erroneous. This survey was not designed for the purpose assumed. It was a preliminary work, essential to the discovery and description in a legitimate and solemn manner of the forfeited lands, and from which lists, technically called "terriers," were afterwards supplied to the several surveyors, for their admeasurement and mapping.'⁵

While the work of the Commission was proceeding, Dr. Petty was summoned to place before the Council his own plan for the mapping of the lands. The forfeited estates corresponded, as a rule, with former territorial jurisdictions—some very ancient—which had become the basis of the more modern division into baronies, themselves divided into parishes and townlands; just as in the early history of England the boundaries of what were originally the lands of villages became those of manors, and, later in the history of the

⁴ Hardinge, p. 15.

⁵ *Ibid.* pp. 15, 20. The commissions and instructions under the

Civil Survey are printed in the Appendix to Sir Thomas Larcom's *History of the Down Survey*, p. 382.

country, again became those of civil divisions, such as parishes and other units of administration.

Ireland, Dr. Petty pointed out, was divided into 'provinces, countries, baronies, parishes, and farm lands,' but formerly, he said, 'no doubt it was not so, for the country was called after the names of the lords who governed the people; for as a territory bounded by bogs is greater or lesser, as the bog is more dry and passable or otherwise, so the country of a grandee or tierne became greater or lesser as his forces waxed or waned; for where was a large castle and garrison, there the jurisdiction was also large.' As a rule the boundary between the lands of these grandees was the line of the division of the waters 'as the rain fell,' and these divisions were the basis of the larger civil territorial divisions of the country, the provinces, counties, and baronies; while as to the smaller divisions, the 'townlands, ploughlands, colps, gneeres, bullibos, ballibelaghs, two's, horsmen's, beds, &c.,' they corresponded with the lands cultivated by certain societies of men, from an early period, or with the lands of particular men, or with land allotted to a planter, or to a servitor as a reward for service, or as the endowment of a religious cell. The baronies varied in size from 8,000 to 160,000 acres.⁶ Starting from the basis of these various civil divisions, Dr. Petty now proposed to survey the country and then map out the whole of the forfeited lands; first surveying all known territorial boundaries and the natural divisions, whether rivers, woods, bogs or other, and then to set out such auxiliary lines and limits in addition to the county, barony, and townland boundaries, as were necessary for constructing a map of the forfeitures, and for the ultimate subdivision amongst the claimants according to the average of their commuted arrears.

The whole task he undertook to perform in thirteen months from an appointed day,⁷ 'if,' he said, 'the Lord give seasonable weather and due provision bee made against Tories, and that my instruments be not found to stand still

⁶ *Political Anatomy*, ch. xiii. pp. 371, 372; *Brief Account*, p. xiii.

⁷ *Down Survey*, p. 9.

for want of bounders.’⁸ He offered to accept payment either at the rate of 6*l.* per 1,000 acres, or a gross sum of 30,000*l.*, out of which he was to pay expenses. ‘Upon the field work, it being a matter of great drudgery to wade through bogs and water, climb rocks, fare and lodge hard,’ he said he would instruct foot soldiers, to whom such hardships were familiar.⁹

The committee reported that the plan was far superior to Worsley’s, who confessed himself ‘gravelled’ at the Doctor offering to complete a task in thirteen months which he had calculated would last as many years.

Worsley, however, was not easily beaten, and, having influential supporters, obtained a further reference to the Committee of the Council, to which some fresh names were added at his suggestion. But, notwithstanding this attempt to pack the tribunal, the committee decided against him.

Their report was as follows :

‘In obedience to your Honour’s reference, dated the 10th instant, wee have taken into consideration the businesse concerning the management of the surveys, and after a full debate thereupon, doe humbly offer, upon the reasons mentioned in our first report, that the lands to be sett out for the payment of the army’s arrears and other public debts, be *surveyed down* as is proposed by Dr. Petty.

‘Dated the 16th of October, 1654. Signed in the name and by the appointment of the rest of the referees.

‘CHARLES COOTE.’¹

The idea of a survey in the present day is indissolubly connected with the notion of a map ; so much so that as a rule the name has come to be applied to the map itself which is the result of the survey, as much as to the preceding inquiries on which the map is founded. But the Civil Survey was simply a specification of lands, recorded in lists, with brief descriptive notes as to acreage and value, and partook of the character of what in modern days is called a

⁸ *Down Survey*, p. 18.

⁹ *Ibid.* pp. 18-19.

¹ *Ibid.* p. 12.

valuation list or register. There were no maps attached to it, and the scheme of a general map, though present to the minds of the authors of the 'Grosse Survey,' had hitherto never been effectually carried out, though commenced here and there. Dr. Petty now undertook both to survey, to admeasure, and to map; and from the wording of his report just quoted, the work carried out by him came to be known as the *Down Survey*, because it was to be surveyed *down* on a map, unlike the Civil Survey, which, as already stated, consisted of lists of lands only with their extent and value.

Worsley, however, was not yet beaten, and he claimed a detailed examination of the report by the full Council, which in consequence had again to go into the matter. Then arose obstruction upon obstruction. The former surveyors, it was said, had not been properly considered, and it was wrong to employ soldiers. Worsley also, cleverly using the weapon given him by his rival's opposition to the transplantation, intimated that Dr. Petty 'intended to employ Irish Papists,' to which Dr. Petty relates 'that it was answered (1) by denyall, (2) by acquainting the Council that there was noe more danger to have the measurer a Papist than the meresman, which for the most part must be such,'² because they were the only persons who knew the boundaries. Eventually these and other difficulties were got over; and on December 11, 1654, 'after a solemn seekinge of God performed by Col. Tomlinson, for a blessing on the conclusion of so great a business,' the preliminary articles of agreement, which had been signed on October 27, were finally adopted in a more detailed shape.³ Dr. Petty thereupon completed his securities, obtaining valuable assistance from Sir Hardress Waller, one of the Cromwellian officers in high command in Ireland; and he then entered into a contract with the Surveyor-General to perform the work in the specified manner. Orders and warrants were issued by the Council for the necessary supply of meresmen, for the delivery by Worsley within thirty days of the lists of the forfeited lands, and for access to the records of the previous surveys; and a

² *Down Survey*, p. 20.

³ *Ibid.* p. 22.

Committee of officers was appointed to meet at Dublin, on February 1, 1655, to consider the best mode of allotting the lands amongst the regiments.⁴

Under his contract, Dr. Petty undertook to survey, admeasure, and map all the forfeited lands, profitable or unprofitable, barony by barony and parish by parish, down to the smallest known civil denominations,⁵ together with all Crown and ecclesiastical lands. Where any civil denomination was in excess of the lot or number of acres due to any officer or soldier according to the amount of his commuted arrears, it was to be subdivided and mapped out into smaller parcels by the help of auxiliary limits, but except for this express purpose, no 'surround' smaller than forty acres was to be separately surveyed and admeasured. All the particulars requisite for the proper distribution of the forfeited lands amongst the claimants were to be entered from the records of the Civil Survey upon the face of each map, such as the names of the owners and the area, with the quality and estimated value. Plotts, or maps, were to be laid down on a scale of forty perches to an inch, and, with the corresponding information and references marked out upon them, were to be delivered to the officers and soldiers on demand, provided that no separate map was to be required of any proportions less than 1,000 acres.⁶ The work, it was agreed, was to be completed in thirteen months dating from December 11, 1654, allowing one year more for complaints or appeals against it; but in consideration of the unavoidable delays which took place in the early stages of the work, the date was ultimately postponed to thirteenth months, from February 1, 1655. The rate of payment agreed upon was 7*l.* 3*s.* 4*d.* per 1,000 acres of forfeited profitable land, of which one penny per acre was to be paid by the army, and the rest by the State. The Church and Crown lands were to be mapped at the rate of 3*l.* an acre. Under his agreement Dr. Petty was to deliver maps of the forfeited lands

⁴ *Down Survey*, ch. v. pp. 40, 41.

⁵ Ploughlands, townlands, colps, &c.

⁶ This means a separate map. One map would often cover the claim of

an officer and several soldiers. The distribution, it must be remembered, was to be by regiments, companies, &c.

with perfect plots of each townland thereon, with the necessary sub-divisions and books of reference, corresponding to the reports of the Civil Survey, when complete, into the office of the Surveyor-General.⁷

By separate articles he engaged to map and project, in addition to the maps of the forfeited estates, the bounds of all baronies and townlands within the before-mentioned counties, whether forfeited or not, so that in each province perfect and exact maps might be had, for public use, of each province, county, and barony,⁸ and for this work he was to receive a payment, the amount of which at the moment does not seem to have been specifically stated.

As to the survey and admeasurement of the adventurers' lands, nothing for the moment was determined.

It will thus be seen that he undertook two things which had no necessary connection with each other, viz. a survey and admeasurement with maps on a large scale of the forfeited lands ; and also the preparation of a general county and barony map of the whole of Ireland, for public use and convenience.

The Act expressly provided that no surveyor or other officer employed in the execution of this survey, during the time of his employment, should be allowed to become a purchaser of land, unless with the consent of the Parliamentary Commissioners appointed under the Act. It was further expressly provided that it should be open to Parliament to pay the surveyors with land, if it were found more convenient than to pay in money : a possibility more than likely to be realised in the embarrassed condition of the finances of the Commonwealth.

The war was over. The division of the spoils was about to commence. 'As for the blood shed in those contests,' Dr. Petty afterwards wrote, 'God best knows who did occasion it ; but upon the playing of the game or match the English won, and had amongst other pretences a gamester's right at least to their estates.'⁹ He had not himself been concerned in the

⁷ Hardinge, pp. 24, 25, 26.

Down Survey, p. 25 ; *Political*

Anatomy, ch. ix. p. 341.

⁹ *Political Anatomy*, ch. iv. p. 317.

original quarrel, and he now simply regarded himself as a servant of the State called upon to perform a definite duty. While he disapproved much of what had been done, his work, he thought, would at least prove of permanent advantage to the nation, and the nature of it appealed to his imagination and his scientific tastes. He entered on his gigantic task, thinking that besides his pay 'he should receive monumentall thanks, and not sufficiently considering,' as experience taught him, 'that too great merit is more often paid with envy than with condign reward.' When it had been completed he looked forward to returning to the study of natural philosophy, thinking his present task 'might prove rather an unbending than a breaking of that bow.' 'I also hoped,' he wrote, 'to enlarge my trade of experiments from bodies to minds, from the emotions of the one to the manners of the other; thereby to have understood passions as well as fermentations, and consequently to have been as pleasant a companion to my ingenious friends as if such an intermission from physic had never been.' In this last respect, at least, he was fully gratified, and in after years, still harping on his favourite analogies from the field of medicine, he said he had in this business 'gotten the occasion of practising on his own moralls; that is, to learn how, with smiles and silence, to elude the sharpest provocation, and without troublesome *menstruums*, to digest the roughest injuries that ever a poor man was crammed with.'¹ A watchful rival was watching his footsteps, to whom perhaps in some respects he had been unfair, and whose powers of mischief, like his abilities, he rated too meanly. This rival had influential friends amongst the extreme religious fanatics of the Anabaptist connection, who hated the Doctor as an unsound theologian, and also among the eager gang of military claimants who were ready to plunder the State which they professed to serve, expecting the officers of the survey to connive at their misdeeds, and ready to be revenged on them if met with resistance. Such was the position. For better or for worse, Dr. Petty was now about to leave the calm life of

¹ *Reflections*, pp. 15, 16.

a scientific student, and the peaceful practice of the art of medicine, for the stormy sea of political strife in a peculiarly troublous time. The following letter to Robert Boyle may, therefore, be deemed no unfitting termination to the narrative of this period of his career :

‘ A letter from Mr. William Petty to the Honourable Robert Boyle, Esq., dated from Dublin, April 15, 1653.

‘ Sir,—Being not able to write you any such complements as may delight you, nor to enforme you of any such more real matter as might profit you, I desire that those my deficiencies, together with my usual rudeness, may be taken for the cause of this long silence. Now indeed I am forced to communicate with you, even to keep up the face of the visible church of philosophers; for by Mr. Worsely his going for England and Major Morgan’s absence in the North, there is no such thing now left at the headqtrs. If there be any other reason of these lines besides this, and to beg my continuance in the number of your affectionate servants, it is to dissuade you from some things, which my lord of Corke, my lord of Broghill, and some other of your friends think prejudicial unto you: one whereof is your continual reading. Here, like a Quacksalver, I might tell you how it weakens the brain, how that weakness causeth defluxions and how those defluxions hurt the lungs and the like. But I had rather tell you that although you read 12 hours *per diem* or more, that you shall really profit by no more of what you read, than by what you remember; nor by what you remember, but by so much as you understand and digest; nor by that, but by so much as is new unto you, and pertinently set down. But in 12 hours how little (according to these rules) can you (who know so much already) advantage yourself by this laborious way? How little of true history doe our books contain? How shy is every man to publish anything either rare or useful? How few opinions doe they deliver rationally deduced but from their own principles? and lastly how few doe begin their tedious systems from principles possible, intelligible and easy to be admitted?

‘On the other side, what a stock of experience have you already in most things? What a faculty have you of making every thing you see an argument of some usefull conclusion or other? How much are you practised in the method of cleere and scientificall reasoning? How well doe you understand the true use and signification of words, whereby to register and compute your own conceptions. So well are you accomplit in all these particulars, that I safely persuade myself, but that your modesty thinks every scribler wiser than yourself, that you can draw more knowledge and satisfaction from two hours of your own meditation, than from 12 hours endurance of other men’s loquacity. For when you meditate, it is always upon some thing that you are not yet cleere in (and a little armor will serve, being put upon the right place); but when you reade, you must take your chance and perhaps be corrupted with lies, disgusted with absurdities, and tired with impertinencies; or made ready to vomitt at the *bis* (imò centies) *recocta crambe* offered unto you. Besides what a difference is there between walking with our naturall legs, and crutches? or betweene a cloth, whose subtegmen is the same from end to end, and another peece d out of a 1000 gaudy rags? But the proverb (*verbum sapienti*) forbids me to be more tedious. The next disease you labour under, is your apprehension of many diseases, and a continual fear that you are always inclining, or falling into one or other. Here I might tell you of the vanity of life; or that to fear any evil long, is more intollerable, than the evil itselfe suffered; &c.

‘But I had rather put you in mind that this distemper is incident to all that begin the study of diseases. Now it is possible that it hangs yet upon you, according to the opinion you may have of yourself, rather than according to the knowledge that others have of your greater maturity in the faculty. But *ad rem*. Few terrible diseases have their pathognomonical signes. Few know those signes without experiences of them, and that in others rather than themselves. Moreover; the same inward causes produce different outward signes; and, *vice versa*, the same outward signes may proceed from different inward causes, and therefore those little rules

of prognostication found in our books, need not always be so religiously believed. Again 1000 accidents may prevent a growing disease itselfe, and as many can blow away any suspicious signe thereof, for the vicissitude whereunto all things are subject suffers nothing to rest long in the same condition; and it being no further from Dublin to Corke, then from Corke to Dublin, why may not a man as easily recover of a disease, without much care, as fall into it? My Cousen Highmore's curious *hand* hath shewn you so much of the fabrick of man's body, that you cannot thinck, but that so complicate a piece as yourself will be always at some little fault or other. But you ought no more to take every such little struggling of nature for a signe of a formidable disease, then to fear that every little cloud portends a cataract or hurricane. To conclude, this kind of vexation hath been much my own portion, but experience and these considerations have well eased me of it.

'The last enditement that I bring against you, is practising upon yourselfe with medicaments (though specifics) not sufficiently tryed by those that administer or advise them.

'It is true, that there is a conceipt currant in the world, that a medicament may be physick and physician both, and may cure diseases *a quâcunque causâ*. But for my part I find the best medicament to be but a toole or instrument: now what are Vandijcks Pencills and Pallet in the hands of a bungling painter, to the imitation of his pieces? Recommendations of medicaments doe not make them useful to me, but doe only excite me to make them so, by endeavouring experimentally to find out the vertues and application of them. There be few medicaments that can be more and more really praised than diafalma and Basilian; for they have been carryed up and down in all chirurgeons' salvatoryes for these many hundred years. Yet how few can perform any excellent cures by them or such others? How hard it is to find out the true vertues of medicaments. As I weep to consider, so I dread to use them, without my utmost endeavours first employed to that purpose.

‘Though none of these arguments prevaile with you, yet I shall pray that nothing of evil consequent to the things, from which I have dissuaded you, prevail upon you. The desire of your encrease in knowledge, and (in order thereunto) of your health, hath made me thus troublesome ; for if what I have said, came from any other principle, I should be ashamed to write myselfe thus confidently

‘ Sr,

‘ Your obliged servant,

‘ WM. PETTY.²

‘ Dublin, 15 April, 1653.’

While the preliminaries of the survey were being arranged, the struggle between the supporters of Henry Cromwell and of Fleetwood had continued. Although the latter treated Dr. Petty with great confidence, he was personally too much under the influence of the Anabaptist officers to throw over Worsley. The fortunes of Dr. Petty and his rival accordingly varied in regard to the survey, according to the advantage gained by one side or the other in the general political contest. The final result depended to a great extent on events in England ; and when, after the dissolution of Cromwell’s First Parliament in January 1655, the breach between the Protector and the fanatical party had greatly widened, the issue in Ireland was no longer doubtful. It was known to be a mere question of time how soon Fleetwood would leave. After several journeys to and fro, Henry Cromwell finally took up his official residence at Dublin in July 1655, and, owing to the emptiness of the Exchequer, it was decided to proceed with the second great disbandment of the army at once. Fleetwood retired to England in the September following, still retaining, however, the title and precedence of Lord Deputy. Dr. Petty could now feel secure, and he entered on his task with confidence.³

He found his ablest assistants in his cousin John, who shared his own talents in mapping and surveying, and in Mr.

² British Museum Add. MSS. 6198, part i. cxvii. B ; Boyle’s *Works*, v. 296.

³ Henry Cromwell at first only re-

ceived the title of Major-General of the Forces. In 1657 he was appointed Lord Deputy.

Thomas Taylor. No less valuable were the services of Mr. James Shaen, who had already been employed as one of the Commissioners for the Civil Survey: a man of great parts and energy, but prone to believe, in whatever was being done, that his own and none other could be the organising head and hand. He was inclined to become the enemy and rival of whoever was placed above him, and was probably equally hostile both to Worsley and Dr. Petty.

On April 12, Dr. Petty received from Worsley the instructions to be observed in making up the books of reference, which, when completed, were, with the maps, to be returned into the office at Dublin. He then proceeded to organise a staff of one thousand persons, consisting of forty clerks at head-quarters, and a little army of surveyors and under-measurers, who worked on the spot in each district.

‘In all these arrangements,’ says a contemporary account, ‘he had vast opposition, while he in a manner stood alone. But he was wont to meditate and fill a quire with all that could in nature be objected, and to write down his answers to each. So that when any new thing started he was prepared, and as it were extempore, to shoot them dead. And as the distribution required exactness in accounts and method, and was a dangerous work, for that the great officers expected to get the parts they had coveted, which going by rate would disappoint, he was forced to show wonders of his own sufficiency by being ready at all points. This in like moment he composed by early meditation of all that could happen, so that he retailed everything to their disadvantage. When, upon some loud representations, the rest of the Commission would refer to him, stating all that had passed (which seemed to require a week’s work), he would bring all clearly stated the next morning to their admiration. His way was to retire early to his lodgings, where his supper was only a handful of raisins and a piece of bread. He would bid one of his clerks who wrote a fair hand go to sleep, and while he ate his raisins and walked about, he would dictate to the other clerk, who was a ready man at shorthand. When this was fitted to his mind

the other was roused and set to work, and he went to bed so that all was ready.’⁴

He applied the principle of division of labour to the making of his instruments, ‘considering the vastness of his work.’ ‘One man made measuring chains—a wire-maker; another magnetical needles with their pins, viz. a watch-maker; another turned the boxes out of wood and the heads of the stand on which the instrument plays, viz. a turner; another the stands or legs—a pipe-maker; another all the brass-work, viz. a founder; another workman, of more sensitive head and hand, touched the needles, adjusted the sights and cards, and adapted every piece to each other.’ Time-scales, protractors, and compasse-cards were obtained from London, ‘whither also was sent for “a magazine of royale paper, mouth glue, colours, pencilles, &c.”’ A uniform size of field book was determined upon, and, where necessary, the surveyors were furnished with small French tents and portable furniture, as it was to be expected that in the wasted counties they would often find neither house nor harbour. Great trouble was taken to secure the most trustworthy meresmen in each barony, and to organise the department of accounts as perfectly as possible. ‘But the principal division of the whole work,’ Dr. Petty relates, was ‘to make certayne persons such as were able to endure travail, ill lodging and dyett, as alsoe heatts and colds, being men of activity that could leap hedge and ditch, and could alsoe ruffle with the several rude persons in the country; from whom they might so often expect to be crossed and opposed. The which qualifications happened to be found among several of the ordinary soldiers, many of whom having been bred to trade, could read and write sufficiently for the purposes intended. Such therefore, if they were but heedful and steady minded, though not of the nimblest witts, were taught.’⁵ The same principle of dividing the labour as much as possible was carried out in the actual work of the survey, one set of men being employed to value the land and to fix what was profitable and what was unprofitable; another to do the actual measure-

⁴ Nelligan MS., British Museum.

⁵ *Brief Account*, p. xv.

ment; another to make up the books of reference; and another to draw and paint the maps; and a few of the 'most nasute and sagacious persons were employed to supervise, and prevent scamping and frauds.' Finally, and in order, as he says, 'to take away all byass from the under measurers to returne unprofitable for profitable, or *vice versâ*, he himself having engaged in an ensnaring contract begettinge suspicioun of those evils against him, in as much he was paid more for profitable than unprofitable,' the supervisors were directed 'to cast up all and every measurer's work into linary contents, according to which they were paid. . . . The quantity of line which was measured by the chain and needle being reduced into English miles, was enough to have encompassed the worlde ne'ere five times about.'⁶ He also drew up a set of instructions for the office work, to prevent fraud and dishonesty. These the highest authorities have pronounced clever and judicious, and have themselves incorporated into modern practice.⁷

The amount of lands forfeited in each province was in Leinster about one-half; in Ulster about one-fifth; in Munster about two-thirds; in Connaught about three-quarters; in the whole kingdom about eleven-twentieths of the total amount forfeited.⁸ The head rental of the lands of Ireland was reserved as a source of revenue by the new Government as the legitimate successor of the Crown, but it was remitted for five years. Subject to the head rental it was now determined to proceed to redistribute the whole of the confiscated estates among the adventurers, the army, and the creditors of the Commonwealth.

The Civil Survey of most of the baronies had been completed before the end of March 1655. On February 1 of that year the measurement and mapping of the army lands by Dr. Petty actually commenced, and proceeded as the lists and information came in from the Civil Survey Commissioners.

Dr. Petty's staff had to contend not only with the natural

⁶ *Brief Account*, p. xvii.

vii. of the *Down Survey*, p. 324.

⁷ See Sir T. Larcom's note to ch.

⁸ Hardinge, p. 34.

difficulties of the country, but also with the opposition of the native Irish, who identified the progress of the work with the loss of their own possessions. Notwithstanding the protection afforded by the garrisons, several of the soldiers and surveyors were captured and killed by the 'Tories.' Eight, for example, were taken by Donagh O'Derrick, commonly called 'Blind Donagh,' near Timolin, in Kildare, carried off into the mountains, and, after a mock trial, executed.⁹ But these difficulties were not sufficient even to retard the work in any material degree. The places of the missing soldiers were rapidly filled, and owing to the skilful division of the labour employed, the survey advanced continuously.

The original plan had been to carry out the survey of the lands and the distribution to the allottees together, the latter being intended to commence immediately on Dr. Petty reporting the completion of his survey over any district sufficiently large to be distributed regimentally. Owing, however, to various delays occasioned by the disputes amongst the committee of officers, to differences of opinion on several points of detail which arose at the commencement of the work near Dublin, to the constant appearance of fresh grantees from England, and the complications caused by the partial distributions which had taken place in some districts under the Grosse Survey to favoured individuals before Dr. Petty's appointment, the original intention had to be abandoned, and the distribution definitely severed from the survey.¹ The partial distributions referred to had been mainly for the benefit of some of the higher officers, who had not only managed to get a start in point of time, but also to get 'the trust of the distribution mainly committed to the persons concerned themselves.' It was very difficult to ascertain what had been done, and a general suspicion of unfairness and corruption hung over the whole of these transactions. When he began his work Dr. Petty says, 'No amount of what was then done ever did appear as a light unto what was further to be done,' and 'the affair was in an altogether

* Webb, *Irish Biography*, article
'Petty.'

¹ *Down Survey*, ch. ix. pp. 66, 80 ;
Thurloe, vi. 683.

ragged condition by reason of the precedent irregular and somewhat obscure actings, anno 1553 and 1555, and other uncertainties of debt and credit, as also of clashing interests.' ²

Nor did the confusion grow less as the inquiries of the Civil Survey Commissioners proceeded. When their estimates first began to come in, it had been believed that the moiety of the ten counties allotted to the army would only satisfy the debt up to a maximum of 12*s.* 6*d.* in the pound. As, however, the work of Dr. Petty advanced, his accurate methods began to reveal the fact that in all probability the extent of the forfeited lands had been underestimated. The committee of officers thereupon demanded that they should be at once paid two-thirds of the claim and receive the remaining third afterwards. Owing, however, to the crippled condition of the finances of the Commonwealth, the Council declined the proposal in regard to the remaining third, and the committee reluctantly agreed to accept in lieu a promise that if, at some future time, it were found possible, they would be paid the balance in lands contiguous to the original allotment; a promise which the officers felt it would in all probability be impossible to carry out in practice, and was therefore regarded as little better than a mockery. This decision laid the seeds of future bitterness which rapidly grew; for soon it was more loudly declared than ever that a sufficiency of land evidently existed for the satisfaction of the whole army debt in full. The army committee accordingly petitioned that the regiments now about to be disbanded might be put into speedy possession of their full and entire satisfaction, according to the Act of Parliament, offering, if it was found on a final account being taken of the whole business, that any parties entitled had been shut out, to compensate the losers in money.³ They also pointed to the four counties reserved by the Government as in their opinion equitably within their own claims should any lands in them remain ungranted, especially if the adventurers, who techni-

² *Down Survey*, pp. 185, 337.

³ Ch. ix. of the *Down Survey* contains the account of these transactions.

cally ranked first, had previously been satisfied in full, and anything still remained unallotted.

The Council, however, which by this time had passed entirely under the influence of Henry Cromwell, finding the financial situation to be even more serious than it had been believed to be, decided against the demand of the officers to be satisfied in full.⁴ A furious controversy at once sprang up, and many of the officers threatened to refuse to take up their allotments, irritated, no doubt, by the sight of their more fortunate colleagues who had got satisfied first in the haphazard and questionable manner already described.⁵ Meanwhile, the officers who in the early distributions had gained this unfair advantage were representing themselves as aggrieved, and were asking for more; probably hoping that this was the best means of at least retaining possession of what they had got. The Council, however, refused to be intimidated by any of the contending factions. 'Liberty and countenance,' Henry Cromwell said, 'they may expect from me, but to rule me or rule with me I should not approve of.' They were therefore informed that it was intended that the overplus of the lands, if any, which might remain after the satisfaction by the two-thirds payment was, owing to the financial necessities of the situation, 'to lye entirely together for the better convenience of the Commonwealth and remaining part of the army,' and that whether the exact proportion paid would ultimately be two-thirds, or some other proportion, must depend on circumstances. This decision in no way satisfied the claimants; and to Dr. Petty, as he himself points out, it became the cause of 'great and unexpected hardshipp,' as most unjustly, he was made responsible for it by the officers, who quite understood that under the terms, however courteous in appearance, there lay a hardly concealed intention of using whatever surplus lands might ultimately be found to exist, for the payment of expenses of the survey and of the other grow-

⁴ See Thurloe, v. 309, 709.

⁵ Prendergast, p. 86; *Down Survey*, pp. 63-66, 211, 185, 186, and note to ch. xiv. p. 337; Thurloe, ii. 314;

iii. 710, 715, 728, 744; vi. 683; vii. 291; Ludlow's *Memoirs*, ed. 1771, p. 196.

ing debts of the Commonwealth, civil and military, which the statutory reservations already made were insufficient to cover.⁶

By April 1656 the greater part of the undertaking was finished; in the autumn of that year the work was complete. Dr. Petty then proposed that proper arrangements should be made for the official examination, and it was accordingly referred by the Council to a committee, who reported favourably on the execution of the task. It was next submitted to Worsley as Surveyor-General, but he alleged various defects and omissions, and urged them with great pertinacity. To these criticisms Dr. Petty replied, pointing out the difficulties, especially the absence of ready money and the confusion of the country, under which the work had had to be performed, and that the omissions in question were all in way of being completed and were to be traced to the above-mentioned circumstances. He therefore formally applied to the Council to give back the contract, and release his securities. This application was referred to the Attorney-General, who recommended that the Doctor's application should be granted. The Council, however, at Worsley's instigation, still for a time delayed giving their assent, but ultimately decided that the work had been properly performed. The bond was then cancelled and the contract given back, to the great vexation of the persons who had constituted themselves the critics of the work, and had prophesied a failure.⁷

'Mr. Worsley,' says Dr. Petty, 'rackt himself and his brains to invent racks for the examination of my work: not unlike the policy of the Church of Rome, as it was deciphered to me by Monsieur Cantarine, that priest whom we were wont to admire for his wit, notwithstanding his feeding and age. This priest and self were eating together at the image of St. Ambrose, our ordinary, and together with us a mad and swearing debauchee. After dinner I asked M. Cantarine what penance they used to impose upon such lewd fellows; he answered me: "Very little, for," said he, "they would do

⁶ *Down Survey*, p. 66; Thurloe, ii. 314, iv. 433.

⁷ *Down Survey*, ch. xiii.

little, if we should, and rather neglect the very Church than put themselves to any pains that way; which when they do, they come no more to us, but become incorrigible hereticks. But," said he, "they be the Bigotts and Devout Persons whom wee load with penance, and on whom wee impose all the scrutinies imaginable in their confession; because such care, and will submit to us therein." In like manner, because I was willing to give content in all things reasonable had I unreasonable things put upon mee, always enduring a more than Inquisition-like severity.*

While these events were taking place, the committee of the adventurers, sitting at Grocers' Hall, London, had become involved in interminable discussions, but at last, in September 1656, they decided to entrust the survey and admeasurement of their lands to Dr. Petty and Worsley jointly. An order and instructions were accordingly issued by the Council, in regard to the forfeited lands in the counties on which the adventurers had a joint claim with the army, to those in Louth and Leitrim, and to those escheated, but as yet not admeasured, in the remaining counties of Ireland. The lands in the liberties of Galway and Athenry were specially excepted from this order, because they were appointed for the satisfaction of the regicide, Colonel Whalley, and they were confided to the superintendence of Dr. Petty by orders of April 3 and December 29, 1657. Thus was begun 'the second great survey,' which was carried out on the same lines and by the same persons as the first, and proceeded with equal regularity and speed.⁹

Owing to the disputes already described between the different categories of officers and soldiers, the provision in the contract by which Dr. Petty had engaged to mark out at once the subdivision by name amongst the allottees on his maps had, as already seen, been unavoidably dispensed with, and the actual allotment for the time adjourned. Meanwhile,

* *Reflections*, pp. 23, 24. Compare D'Alembert, *Sur la Destruction des Jésuites en France*, ed. 1765, p. 67.

⁹ *Down Survey*, p. 53; Hardinge, p. 24.

the lists of forfeited lands prepared by the Civil Survey Commission and the maps, had been returned into the Court of Chancery. But when, owing to the firmness of Henry Cromwell, the disputes had at last been brought to some kind of at least superficial settlement, the work of distribution had to be entered upon. This was really a far more difficult matter than even the survey which preceded it. In the first, Dr. Petty had had mainly to contend with the natural difficulties of the country; in the second, whoever was entrusted with it would have to wrestle with the fiercest passions of the human heart, excited by greed and ambition.

Henry Cromwell, weary at last of the opposition of a few interested critics, had insisted that there should be no further delay, and on May 20, 1656, the Council decided that the lands allotted to the army should be distributed according to Dr. Petty's maps and admeasurement by a committee of agents or trustees chosen by the army, as contemplated by the Act, and without necessarily waiting for the previous distribution of their lands to the adventurers, who, as already seen, technically ranked first. But a large committee was evidently useless, and after long and acrimonious disputes, the distribution was ultimately delegated, through the determination of Henry Cromwell, on May 20, 1656, to a committee of six, and eventually on July 10 following to an executive of three—Dr. Petty, Vincent Gookin, and Colonel Miles Symner—the last an officer who appears to have been *persona grata* to the party of the Protector, and is described by Dr. Petty as 'a person of known integrity and judgment.' Subsequently Mr. King was added to their number. The choice was remarkable. It indicated the triumph of the ideas of the civilian party over the rapacity of the officers, and the defeat of the fanatical section amongst the latter.

The larger committee of six would, it was hoped, have composed the differences among the officers before the distribution began, for it had been discovered at an early period that the Act rates produced the gravest injustice, as lands varied as much in value between particular counties as they did between the provinces. To obviate this injustice, a system of equalising the

rates as between the different counties in each province had been agreed upon by the Committee of Officers before casting the lot, which decided to which county each regiment was to be assigned. But it soon was noticed that lands varied just as much in value in the baronies and in the smaller denominations as in the counties, and fresh complaints arose. After much discussion the system of equalisation was extended to the baronies, and the plan on which the lands of the army were distributed was ultimately arranged as follows. The regiments in each province having settled in which county and barony each was to be located, the forfeited lands were then arranged on a string or list, barony by barony; and finally, a lot or ticket was made for every troop or company, with the arrears marked on it which were due in each case, and the total number of acres they represented subject to the equalisation, with the names of the several officers and soldiers. A species of ballot, or 'boxing,' as it was called then, determined in what barony the lot fell for each troop or company; and finally, the lot of each officer and soldier in the smaller civil denominations and the order in which they ranked.¹ The equalisations made by the officers, notwithstanding their attempt at redressing the most glaring inequalities, were at best of a very rough and ready description. 'They were made,' Dr. Petty afterwards wrote, 'as parties interested could prevail upon and against one another by their attendance, friends, eloquence, and vehemence: for what other foundation of truth it had in nature I know not.' The army had indeed signed a paper in which they all declared 'that they had rather take a lott upon a barren mountaine as a portion from the Lord, than a portion in the most fruitful valley, upon their own choice;' but when Providence gave 'a lott upon a barren mountaine,' then too often the contrast with the more fortunate possessor who had obtained 'a portion in a most fruitful valley' became more than the minds of even the elect could endure. 'The principal care,' says Dr. Petty, 'was to avoid the County of Kerry because of its reputed poverty;' and resort was had to every kind of device to obstruct the ways of

¹ *Down Survey*, pp. 86, 102, 208, and p. 337 note.

Providence in fixing a portion from the Lord in that particular district.² ‘This party of men,’ says Dr. Petty, ‘although they all seemed to be fanatically and democratically disposed, yet in truth were animals of all sorts, as in Noah’s Ark.’³ ‘The great officers expected to get the parts they had coveted,’ and were ready to make everybody who stood in their way suffer for their opposition. Owing to these furious ambitions and jealousies, the hope that the committee of officers would be able to settle all the differences amongst the allottees before the distribution began, was disappointed, and the commissioners, of whom Dr. Petty by the force of circumstances became the directing hand, owing to his technical knowledge, had now to settle for themselves the burning question of what proportion of each claim was actually to be paid, and also to decide how to deal with the earlier allottees, as well as to settle many minor points.

In order to arrive at a just decision they determined to pass over all previous discussions, declarations and concessions, and reduced the whole army by calculation to the state it was in in 1654, when they had cast the regimental lot so as to allow derivative claims.⁴ This was the debtor side of the account. They then ascertained what lands were at their disposal, according to the Act of Parliament and the Orders in Council issued under it. This was the creditor side of the account. ‘The whole forfeited land set aside for the army was destined to pay the whole army debt at certain values specified by the Act; and it was necessary that the whole should be cast or recast in one crucible, that all might share alike. Accordingly, setting aside the enhanced rates at which the former settled parties had been redeemed, the prayer for additional compensation, and the remonstrance of the army against it, Dr. Petty appears to have computed the claims of the whole army as if one uniform distribution had been made, and then considered each as having received, or being about to receive, such or such a *quota pars*, in order to make up the

² *Political Anatomy of Ireland*, ch. x. p. 342; *Down Survey*, pp. 91, 210.

⁴ *Down Survey*, ch. xiv. p. 207; *Reflections*, p. 116.

³ Nelligan MS., British Museum.

deficient, and pare down the redundant, to the same rate in the pound on their respective claims.' ⁵

The amount actually to be received by each claimant appears to have been fixed at five-eighths on the arrears of pay, as commuted into land at the adventurers' rates, subject to the equalisations agreed upon. The odd roods and perches on the regimental allotments, called 'the refuse ends and tayle lots,' were withdrawn with the consent of the army from the distribution. It was hoped that these surplus lands and the advantage to the public gained by equalising the rates, which diminished the total amount allotted, would materially increase the fund remaining over to meet the other unsatisfied liabilities of the Commonwealth.⁶ The officers grew very unruly and clamorous while the work went on, so much so that Major Symner lost his head, and for a time had to retire; nevertheless by February 1657 the distribution was complete, so far as the task of the executive committee was concerned.

Dr. Petty and his staff had surveyed for the army 3,521,181 acres, and the sum passed as due to him was 18,532*l.* 8*s.* 4½*d.*, including 1,000*l.* for the county and barony maps. Out of this sum had to be deducted the whole of the expenses of the survey, and a sum of 1,538*l.* 8*s.* 6*d.* for the surveyors under the previous abortive survey whom he had agreed to pay. The money owed him by the army, after considerable delay, was paid, with the exception of a sum of 614*l.* In order to get in a large portion of the sum due, he says he was forced 'to collect and wrangle out of the soldiers in an ungrateful way and by driblets, what the State was bound to pay him in a lump, and to receive in bad Spanish money what he was to have in good sterling.'⁷ Not being able to get the whole amount due to him paid, he was obliged to accept in lieu of it as much of a debt of 3,181*l.* 14*s.* 3*d.* owed to the State by the army as

⁵ Sir T. Larcom's note, *Down Survey*, p. 336, and see also *Down Survey*, ch. xiv. pp. 191, 195. I desire here once more to record the obligation expressed in the Preface, which I owe to the notes by Sir Thomas Larcom in regard

to the intricate technical points connected with the survey and distribution.

⁶ *Down Survey*, p. 189, and Sir T. Larcom's note to ch. xv. pp. 339, 340.

⁷ *Reflections*, p. 47.

he might be able to collect. Eventually, when the whole of the arrangements for the satisfaction of the army had been completed, he commuted this debt into land debentures representing 1,000*l.* in surplus undistributed 'refuse ends and tayle lots,' which were assigned to him at Act rates by the Council in exchange for his debt, according to the provisions of the Act, which, as already stated, enabled the Council to pay for the work in land in lieu of money. He was also allowed in connection with this arrangement to invest a portion of the debt in mortgages on lands encumbered to the Commonwealth, which under the Act had been kept out of the general distribution, and to redeem these lands. But he undertook in the event of the 'refuse ends and tayle lots' being found to exceed the amount due to him, or if the soldiers brought in their remaining pennies, to cancel debentures to that amount; and he entered into securities of 3,000*l.* to guarantee these conditions.

In this manner he received for the army debt, and the sum of 1,000*l.* owing to him, 9,665 a. 1 r. 6 p. of profitable land, with a proportion of unprofitable; and from mortgages of encumbered land he bought 300 acres in Leinster and Munster, and 1,000 in Ulster. By the adventurers Dr. Petty was promised 600*l.*⁸ For his services as Commissioner of Distribution, Dr. Petty, 'observing the Treasury to be low, applied to be paid in debentures, and received lands under Orders from the Council as follows:

	A.	R.	P.
In the liberties of Limerick . . .	1,653	1	0
In the county of Kerry, in the parish of Tuosist	3,559	0	31
In Meath, near Duleek	555	18	0
„ „ „	250	0	0

⁸ As to the adventurers' survey, see the references in the *History of the Down Survey*, pp. 53, 127, 136, 236, 246, 247. The order for the survey is to be found in the appendix to Sir Thomas Larcom's edition, p. 390. The references to the adven-

turers' survey in the *History* are few and meagre, as compared with the account of the survey of the army lands; the reason being that the adventurers' survey was not the object of much subsequent attack. The men of business with whom Petty had to

these lands being the equivalent of a sum of 2,000*l.* due to him.⁹ The result of all these payments was a net sum of 9,000*l.*¹

The maps of the forfeited lands comprised in the army allotments had been completed very close upon the period of thirteen months from February 1, 1655, to which, under his agreement, Dr. Petty was limited; but as he had asked time to make the record complete, the official deposit did not take place till June 24, 1657, when 'all the books with the respective mapps, well drawne and adorned, being fairly engrossed, bound up, indexed and distinguished, were placed in a noble repository of carved worke and so delivered into the Exchequer.'²

Fresh difficulties, however, now arose. Many of the officers refused to take up their allotments, hoping that if the adventurers' claims were settled first, the army would obtain a better result by claiming the residue in what were known as the 'dubious lands,' than if their own claims were satisfied first, as was now proposed, and the earlier allottees refused to give up anything. Their eyes were also still fixed on the rich lands in County Louth, which many hoped to obtain instead of allotments in the desolate regions of Kerry.

At length it was agreed, on the suggestion of the Lord Deputy, that in order to get the matter forward, Dr. Petty should go to England and meet the committee of the adventurers.³ He was also entrusted with the care of handing over

deal appear to have behaved far more reasonably than the grasping body of military men whom he had had to meet in the first survey. The sum of 600*l.* is given as 60*l.* in the copy of Sir William Petty's will, printed in the *Petty Tracts*; but the correct figure in the text of the will is that printed above. The survey of the lands allotted to the other creditors are not specially mentioned in any of these accounts.

⁹ *Down Survey*, chs. xii., xv. See, too, Sir Thomas Larcom's Notes,

pp. 339, 340; and the *Reflections*, p. 25.

¹ Sir William Petty's Will.

² *Down Survey*, p. 183, and *Brief Account*, p. xvii. 'This cabinet of most exquisite joiners' work,' also mentioned as the repository of the maps in the *Brief Account*, is probably the antique press discovered by Mr. Hardinge in the Treasury Buildings, Lower Castle Yard. See note at the end of the chapter.

³ Thurloe, vi. p. 760; *Down Survey*, p. 211.

to Secretary Thurloe the addresses of the Irish army accepting the order of things established by 'The Humble Petition and Advice,' and 'The Instrument of Government'—addresses not obtained without great difficulty from the Independent and Anabaptist officers—and he was also the bearer of letters to General Fleetwood, and to Lord Broghill, then in England and unwell.

'Dr. Petty,' Henry Cromwell wrote to Fleetwood, 'is coming over with the addresses, and to see whether any conclusion can be made with the adventurers, with whom we are daily troubled. I shall only say this for him, that he has in all the late transactions shown himself an honest man.' Dr. Petty, he told Lord Broghill, 'is one to whom your lordship may safely communicate such things as your hearers and indisposition will not permit you to write yourself.'⁴

There is a glimpse of Dr. Petty during his visit to London in a letter from Hartlib to Boyle, from which it appears that his surveying operations had not quenched his interest in scientific subjects. Dr. Petty, Hartlib tells Boyle, 'has been with me two hours. He talked of an educational plan on which he proposed to spend 2,000*l.*, not doubting but that he would be a good gainer in the conclusion of it. The design aims at the founding of a college or colony of twenty able learned men, very good Latinists of several nations, that should teach the Latin tongue (as other vulgar languages are learnt) merely by use and custom. This, with the history of trades, he looks upon as the great pillars of the reformation of the world.'⁵

Most of his time was, however, occupied by his negotiations. He found the committee of adventurers again involved in disputes. It required several months to adjust the points at issue, but so favourable was the impression he created, that notwithstanding anonymous attacks which pursued him from Ireland, instigated by the officers who were dissatisfied at not obtaining full measure, he was made a

⁴ H. Cromwell to Fleetwood, May 5, 1658; H. Cromwell to Lord Broghill, May 1658; Thurloe, vii. pp. 144–5.

⁵ Hartlib to Boyle, August 10, 1658, in Boyle's *Works*, v. p. 280.

member of the executive appointed by the adventurers' committee for the distribution of their lands. This executive accomplished its task about the autumn of 1658. The work was far easier than in the case of the army lands, for the claims as a rule were larger in amount and smaller in number. As in the case of the army lands, a ballot or boxing was adopted to settle the order of the claimants, and the lands were distributed by the string thus created. The maps of the counties which were the joint property of the adventurers and the army, and of Louth, had been completed in about thirteen months, but they were not returned into the Surveyor-General's Office till the latter end of 1659, for reasons similar to those which had caused a delay in the final deposit of the maps of the army survey.

The allotment of the adventurers' lands was the last step in the great work Dr. Petty had undertaken, and before it was entirely completed an event had occurred which hastened it on and rendered all the claimants anxious to settle. On September 4, 1658, the Protector died, while Dr. Petty was still in England. By the end of the year, except in the 'dubious lands,' the allottees were everywhere entering into possession. Owing, however, to the determination of the earlier military allottees not to allow their allotments to be pared down to a common level, and the impossibility of giving possession in the case of the 'dubious, encumbered and withdrawn lands,' great inequalities still existed, 'some of the adventurers being left deficient and some of the soldiers being wholly deficient also, and some but in part satisfied; some according to a quota of 4*s.* 3*d.* in the pound, and some 2*s.* 3*d.* only.' The maximum actually received seems to have varied from 12*s.* 3*d.* to 13*s.* 4*d.*⁵ The allotment was not indeed perfect; the circumstances did not permit of it; but to the rapidity with which the survey and the distribution were carried out, the army and the adventurers owed it that they were in possession of their lands at the Restoration, when a very different distribution would probably

⁵ 'Another more calm and true narrative of the sale and settlement,'

Nelligan MS., Brit. Mus.; see also *Down Survey*, p. 208.

have taken place, if the advocates of change had not been met by the logic of accomplished facts, which they were compelled, however unwillingly, to respect.

From first to last the settlement of Ireland by the Commonwealth had occupied a space of four years, of which the actual distribution of the lands had occupied half. All this, 'which is the more wonderful,' says Clarendon, 'was done and settled within little more than two years, to that degree of perfection that there were many buildings raised for beauty as well as for use, orderly plantation of trees, and fences and enclosures raised throughout the kingdom, purchases made by one from the other at very valuable rates, and jointures made upon marriages, and all other conveyances and settlements executed as in a kingdom at peace within itself, and where no doubt would be made of the validity of the titles.'⁷ Such is the contemporary testimony of the great historian of the rebellion. Equally decisive is the verdict of one of the most skilled of modern Irish administrators, and one of the highest authorities on the art of surveying—at an interval of nearly two centuries—on the labours of his predecessor. 'It is difficult,' Sir Thomas Larcom wrote in 1851, 'to imagine a work more full of perplexity and uncertainty than to locate 32,000 officers, soldiers, and followers, with adventurers, settlers, and creditors of every kind and class, having different and uncertain claims, on lands of different and uncertain value in detached parcels sprinkled over two-thirds of the surface of Ireland; nor, as Dr. Petty subsequently experienced, a task more thankless in the eyes of the contemporary million. It was for his comfort that he obtained and kept the good opinion of those who were unprejudiced and impartial. The true appeal is to the quiet force of public opinion, as time moves on and anger gradually subsides; and from that tribunal the award has long been favourable to the work of Dr. Petty. It stands to this day, with the accompanying books of distribution, the legal record of the title on which half the land of Ireland is held; and for the purpose to which it was and is applied, it remains sufficient.'⁸

⁷ Clarendon's *Life*, p. 116.

⁸ *Down Survey*, notes, pp. 338, 347.

NOTES TO CHAPTER II

I

On the Maps of the Survey

It may be surmised that the chest mentioned in Chapter XIII. of the 'Down Survey' is the same as that described by Mr. Hardinge, which, on being opened by him in a room where it was discovered at Dublin in 1837, was found to contain townlands maps of some of the surveys on two scales: a reduced scale as described in the 'Brief Account,' and a larger scale, from which apparently the official maps had been reduced, thereby affording important evidence for Mr. Hardinge's contention that there were two sets of townland maps—the first set on a large scale, and the second set or official maps on a reduced scale. The latter were undoubtedly those officially deposited. The maps so deposited were, however, not uniform in scale, but were made on a variety of scales in order to accommodate the baronies and parishes, which naturally varied in size, to a sheet of 'royal' paper of uniform dimensions; the effect of which was to reduce the original barony maps to scales varying from 80 to 640 perches to the square inch, and the original parish maps to scales varying from 60 to 140 perches to the square inch. These official maps were greatly injured in the fire of 1711, which destroyed a large portion of the Government offices in Dublin. What became of the original maps is doubtful.⁹ A few of them were found by Mr. Hardinge in 1837 in the old press in the ancient Treasury buildings in Dublin, with a few of the reduced official and parish maps, but the remainder have been lost. Their discovery, as pointed out by Mr. Hardinge, would be of special interest, owing to the partial destruction of the official maps.¹ 'A set of barony maps,' says Mr. Hardinge, 'preserved in La Bibliothèque Impériale at Paris, have by many been supposed to be the originals. The Irish Parliament and the Government were led into this mistake when Colonel Vallancey, R.E., was engaged, at a heavy cost, in 1791, to make

⁹ *Down Survey*, p. 323, note to ch. vii.; Hardinge, pp. 26-9.

¹ In the estimate of his estate made in his will, Sir W. Petty says: 'I value my three chests of original mapps, Field books, the copy of the *Down Survey* with barony mapps, and

the chests of Distribution books, with two chests of loose papers relating to the Survey, the two great Barony books, and the books of the *History of the Survey*, altogether, at two thousand pounds.'

copies of them for the office of Surveyor-General of Crown Lands in Ireland. The Irish Record Commissioners fell into the same error, and it has been recently reiterated in the Preface to a "Calendar of the Patent and Close Rolls of Chancery in the Reign of Queen Elizabeth," compiled by Mr. James Morrin, and published under the directions of the Master of the Rolls in Ireland, with the further additional statement, "that the Down Survey records were carried to France by King James II., and that they still remain there." I personally examined the Parisian set of barony maps many years ago, and after a very careful comparison of them with an original volume, belonging to the Surveyor-General's set, brought with me for the purpose, can authoritatively pronounce the Parisian maps to be but copies of the Down Survey barony maps, enlarged in their text by introducing into their parochial subdivisions the outlines and names of the townlands; and this enlargement was made by Petty from the Surveyor-General's set of Down Survey parish maps. The difference between the Down Survey and Parisian set of barony maps is so striking, that I am surprised that any official examiner should have concluded the Parisian set to be originals. The history of the Parisian maps is this. A French privateer, cruising in the Channel in the year 1710, captured a ship having on board these maps in transit from Dublin to the son and heir of Sir William Petty, at Lothbury, London, when they were immediately carried to Paris and deposited in La Bibliothèque du Roi, where they have remained ever since. Were this set of barony maps restored by the French Government, they would be of no more value than the copies made of them by Vallancey. They were compiled, as described, from the Down Survey barony and parish maps, between the years 1660 and 1678, while Vallancey's copies of these were made in 1790 and 1791, but neither set would be received as evidence, except by consent, in any court of justice in these kingdoms.'² The error as to these maps noticed by Mr. Hardinge is repeated in Edward's 'History of Libraries,' ii. 259.

During the Lord Lieutenancy of the Earl of Essex, who succeeded the Duke of Ormonde, copies of the barony maps were by his direction made by Mr. Thomas Taylor, in sixteen volumes, imperial folio. These found their way into the Ashburnham collection of manuscripts, and without their aid no complete idea can be formed of the distribution of the forfeited lands.³

Hardinge, pp. 32, 33.

³ See Appendix to the Eighth Report of the *Historical MSS. Commis-*

sioners, Part III. p. 40; and Hardinge, Part III. p. 284, who says two copies were made.

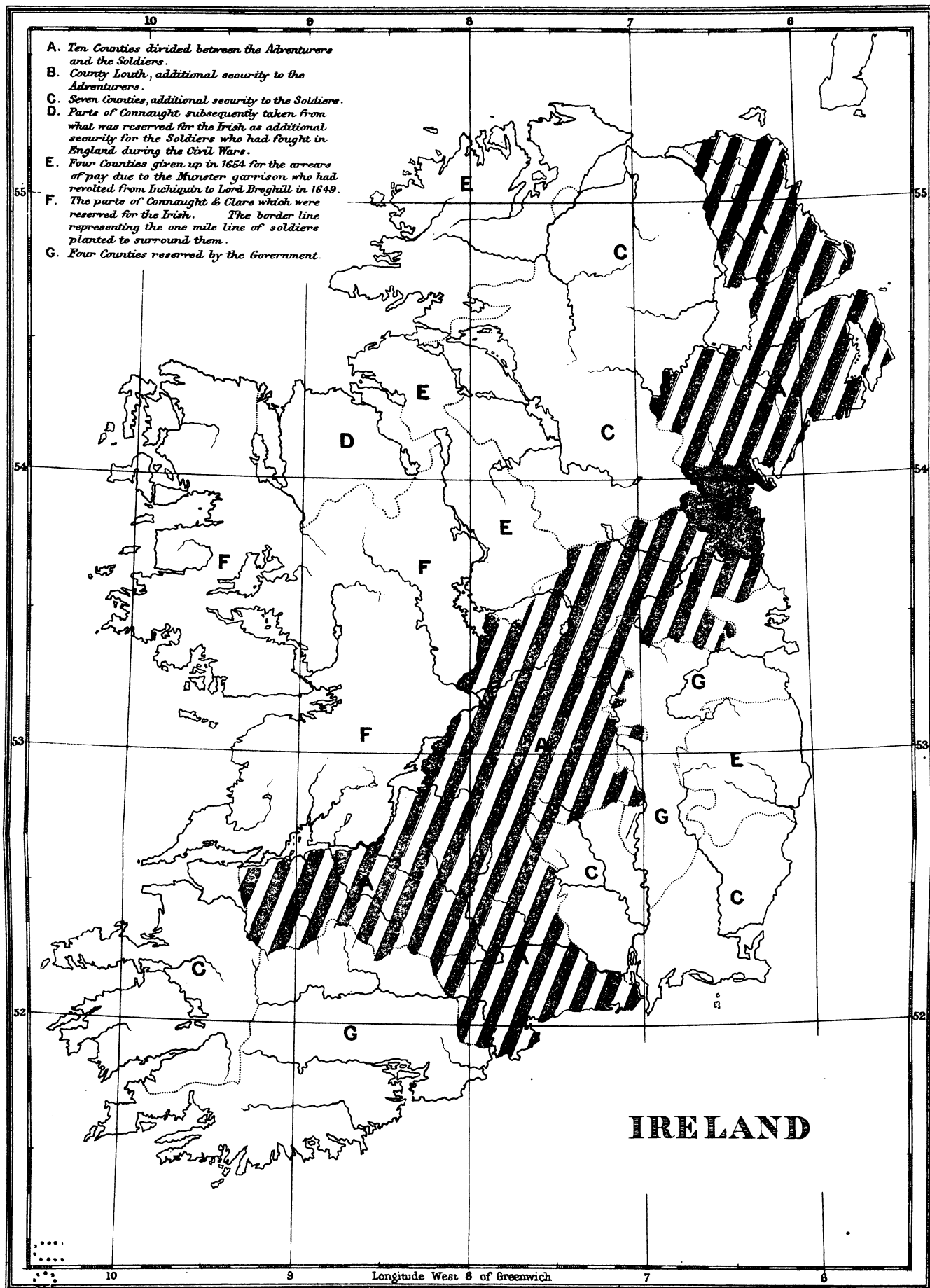
II

Clauses of the Act of 1653 relating to purchase of land by the surveyors and others, and their payment in land debentures :

‘ PROVIDED ALWAYS, and be it hereby declared, that no Surveyor-General, Registrar, Under-Surveyor, or any other person employed in the execution of this service, his or their childe, or children, during the time of their employment, or any in trust for him or them, shall be admitted directly or indirectly, to be a purchaser of any part of the lands to be surveyed, upon pain that the purchase be void unless that they do first acquaint the Commissioners of Parliament with their desires and obtain excuse from them for the same.’

‘ PROVIDED ALWAYS that if any of the aforesaid persons to be employed by this Act, their child or children, heir or executors, have arrears or publique debts due unto them from the Parliament, which shall be allowed of as aforesaid, that the Commissioners of Parliament be and are hereby authorized to lay out and make over lands for their satisfaction in such manner and at such rates as are appointed by this present Act for other arrears or debts of the same nature.’⁴

⁴ Scobell, *Acts and Ordinances for 1653*, ch. xii.



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CHAPTER III

DR. PETTY AND HENRY CROMWELL

1658-1660

Sir Hierome Sankey—Dr. Petty and Henry Cromwell—Death of Oliver Cromwell—Attacks on Dr. Petty—Election at Kinsale—M.P. for West Looe—Attack on Dr. Petty in Parliament—Dr. Petty's speech—Fall of the Cromwellian party—Renewed attacks on Dr. Petty—'Reflections on Ireland'—'History of the Survey'—The Restoration—Character of Bradshaw—Politics and Religion—The Situation in 1660.

DR. PETTY'S work was now over, with the exception of the distribution of the 'dubious lands.' The survey was complete, and, in the statutory acceptance of the term, all were technically 'satisfied.' But considering the nature of the operation, the number of the claimants, and all the circumstances of the case, it can hardly be a matter of surprise that many were very far from being contented. From the very outset, the soldiers had been anything but unanimous in approving the plan of paying them with Irish land; and, partly owing to their discontent, and partly through pecuniary distress, they had commenced selling their debentures at cheap rates to the officers, who eagerly welcomed the opportunity of becoming large landed proprietors. Many also of the officers, and some of the most influential, were discontented with the results of the allotment in their own particular cases. Some impugned the ways of Providence, others blamed Dr. Petty. Discontent was especially prevalent among the Munster regiments, the lot of which had partly fallen in the inhospitable regions of Kerry. At an early stage in the distribution, a struggle had begun between the Committees respectively representing these regiments and those whose lot had fallen in Leinster and Ulster, as to the assignment of certain properties.¹ The leader on the Munster side amongst

¹ *Down Survey*, ch. x.

the officers was Sir Hierome Sankey. He is described by Wood as having been educated at Cambridge; 'but being more given to manly exercises than logic and philosophy, he was observed by his contemporaries to be a boisterous fellow at cudgelling and football playing,—though a candidate for holy orders—and more fitt in all respects to be a rude soldier than a scholar or man of polite parts. In the beginning of the rebellion, he threw off his gown, and took up arms for the Parliament; and soon after became a captain, a Presbyterian, an Independent, a preacher, and I know not what besides,' says Wood, who goes on to relate that, when the war ceased and the King's cause declined, Sir Hierome obtained a fellowship at All Souls College from the committee of visitors. He was proctor in 1649, and officiated as such when Fairfax was made a Doctor of Civil Law, but 'retained his military employment, and went in the character of a commander to Ireland.'² There he served with great distinction, and was amongst the earliest grantees of forfeited lands, as upon a Parliamentary order of October 22, 1652, the Commissioners for the affairs of Ireland ordered a survey to be made of the manor of Kilmainham in Leinster in his favour.³ He next declared himself an Anabaptist, and trusting partly to his own pushing temperament, and partly to the favour which he enjoyed with the extreme fanatics of the army owing to his new profession of faith, he attempted to obtain an order for rejecting three thousand acres which had fallen to him by lot, and for enabling him to elect arbitrarily the same quantity elsewhere, 'a thing,' says Dr. Petty, 'never before heard of.'⁴ This demand the Commissioners refused, and Sir Hierome determined to have his revenge,⁵ especially on Dr. Petty, whom he considered mainly responsible for the refusal.

Other circumstances besides these militated to bring Sir Hierome into collision with Dr. Petty and to embitter the quarrel. Not only was Sir Hierome an Anabaptist, but

² Wood, *Fasti Oxonienses*, Part II. pp. 119, 148, 156, Ed. 1817; see also *A Contemporary History of Affairs in Ireland*, ed. by Mr. John L. Gilbert for the Irish Archæological Society.

Preface xxiv. and p. 130.

³ Harding, p. 5.

⁴ *Reflections*, p. 69.

⁵ *Down Survey*, p. 81.

he appears to have belonged to a peculiar section of that body, which professed itself able to cure illness by the laying on of hands, and was persuaded that the fumes of their own bodily humours were the emanations of God's spirit.⁶ On these claims Dr. Petty was constantly pouring a boundless ridicule from the point of view of medical science. His 'Reflections' are full of grotesque anecdotes of the spiritual claims and antics of Sir Hierome and his coadjutors. Thus he relates how a Mr. Wadman, being in a fit of melancholy, owing to the death of his wife, was visited by Sir Hierome, who, taking notice of some odd expressions let fall by the patient, came to the conclusion that Wadman was possessed: 'that is, to speak in the language of Sir Hierome's order, enchanted.' Sir Hierome thereupon undertook to cast out the devil. At the end of every period of his conjurations, he would ask Mr. Wadman 'how he did,' to which the invariable reply was, 'All one.' 'At length, Sir Hierome being weary of his vain exorcisms, was fain to say that Wadman's devil was of that sort which required fasting as well as prayer to expell it. Whereupon the spectators, observing how plentifully Sir Hierome had eaten and tiddled that evening, did easily conceive the cause why the devil did not stir.' Sir Hierome claimed earlier in life to have successfully exorcised a celebrated walking spirit named 'Tuggin,' 'between whom and him there were great bickerings;' but that struggle, Dr. Petty maliciously reminded his adversary, was when he was aspiring to holy orders in the Established Church,⁷ and he told him that he might consequently be more correctly described as a 'curate adventurer' than a 'knight adventurer.'⁸ For these jibes and jeers Dr. Petty had to pay. All through the later stages of the distribution of the army lands, Dr. Petty describes himself, alluding possibly to the early prowess in manly sports of Sir Hierome—as 'having been like a restless football, kickt up and down by the dirty feet of a discontented multitude,' and as 'having been tyed all day long to the stake, to be baited for the most part by irrational creatures.'⁹ . . .

⁶ *Reflections*, p. 139.

⁷ *Ibid.* pp. 101, 102.

⁸ *Ibid.* p.

⁹ *Ibid.* p. 20.

‘His adversaries were persons of extraordinary pertinacity, sometimes raising up one, sometimes another evil report, sometimes asserting one kind of crime, sometimes another; sometimes accusing him before the Council, sometimes causing him to be convened before the general and chief officers; then setting up a court in the Green Chamber at Dublin, under the pretence of deciding controversies between soldier and soldier; and sometimes designing to trouble him at law, wherein they knew he had no experience or dexterity to defend himself.’¹

After the dissolution of the second Parliament called by the Protector, in 1658, the struggle between him and the Anabaptists continued, and the favour shown to Dr. Petty by Henry Cromwell was a sufficient reason for his being the mark of the attacks of the religious fanatics. He was censured by the old surveyors, the *protégés* of Worsley, many of whom he had had to dismiss as incompetent, the evidence against them being only too clear. Then ‘another more dreadful clamour arose,’ that he had employed drunken surveyors; and that through their drunkenness unprofitable land, especially in Kerry, had been set out as profitable land to the detriment of the soldiery, and to his own advantage.² His foes declared him to be ‘a Socinian, a Jesuit, and an atheist.’³ He, on the other hand, considered them as ‘hypocrites, proud Pharisees and Ananiases, following Christ for loaves.’ They accused him of having profited by his position as Commissioner to rob the army, to plunder the adventurers, and to defraud the State. He charged them with having wished to do so, and of having only failed through his own opposition.

Where open attack had failed, flattery, it was thought, might succeed, and his enemies now offered, as a pretended mark of distinction, to give him the command of a troop of horse, ‘believing that being no soldier, he should soon fall into some misfortune, for which they would disgrace

¹ *Down Survey*, p. 257.

² *Ibid.* chaps. ix. and x. and Sir Thomas Larcom’s Note, p. 329, who

says that Dr. Petty’s answers were perfectly satisfactory.

³ *Reflections*, p. 137.

or punish him at a court martial of their own packing.' ⁴ But the wary Doctor, knowing full well what was intended, refused the insidious honour and declined to be tempted with the prospect of enjoying military rank. A more agreeable distinction, however, awaited him, for at this moment, 'even,' as he says, 'when the cry of his adversaries was loudest,' he received the appointment at a salary of 400*l.* a year of Additional Clerk to the Council, ⁵ and Private Secretary to the Lord Deputy, which title Henry Cromwell now at length assumed. The honour was evidently intended as a rebuke to his assailants. ⁶

'The access, however, of these new and more honourable trusts,' he relates, 'did but quench his fires with oyle, and provoked his ambitious adversaries to think of hewing down the tree uppon a twigg whereof he stood ; so as by multiplying their surmises and clamours hee became the Robin Goodfellow and Oberon of the country ; for as heretofore domestics in the country did sett on foot the opinion of Robin Goodfellow and the fairies, that when themselves had stolen junkets, they might accuse Robin Goodfellow of itt ; and when themselves had been revelling at unreasonable hours of the night, they might say the fairies danced ; and when by wrapping themselves in white sheets, they might go any-whither without opposition, upon the accompt of there being ghosts and walking spirits ; in the same manner several of the Agents of the Army, when they could not give a good accompt of themselves to those that entrusted them, to say that Dr. Petty was the cause of the miscarriage was a ready and credible excuse.' ⁷

⁴ *Down Survey*, p. 257.

⁵ *Ibid.* p. 209.

⁶ The following is a specimen of Dr. Petty's Latin style as Clerk to the Council.

'License to authorize the publication of a Latin treatise on Death, by John Stearne, M.D., at Dublin in 1659.

'Hauriat vitalem auram elegans de Morte Dissertatio, quâ doctissimus Stearnius noster non modo famam suam Morti, sed etiam universam

Naturam ruinæ surripuit : siquidem in eâ nihil bonos mores vitiatum, nihil in imperium nunc florens insidiarum, nec argutias sacræ Fidei infestas video. Guil. Petty, cler. Concilii. Datum Dublinii, et Camerâ Concilii, ult. Januarii 1658.' *Thanatologia, seu De Morte Dissertatio . . . Authore Johanne Stearne Medicinæ Doctore*, 12 Dublin, 1659. I am indebted to W. J. P. Gilbert for this document.

⁷ *Down Survey*, ch. xiv. pp. 209, 210 ; *Reflections*, p. 113.

And so on throughout the whole chapter. Whatever went wrong was the fault of Dr. Petty; for whatever went right small thanks were due to him: the disappointed accused him of being the cause of their disappointment; and the envious affected to believe he had been corrupted by those to whom the best lands had fallen.

As the surveyors themselves could not be proved to have been all either dishonest, incompetent, or drunkards, he was accused, notwithstanding the precautions he had taken, of having maliciously made them return unprofitable as profitable land, to increase his own gains, and when it was pointed out that special precautions had been taken to prevent this, his methods, it was said, were employed 'to obscure his gains,' by puzzling and confounding the surveyors, and so making them amenable to his purposes. To some he was 'a juggler;' to others he was 'Judas Iscariot;' to all the discontented alike he was the common enemy, to be denounced and hunted down as best they might, by force or by fraud, according to the circumstances of the hour.⁸

The Anabaptists now commenced an organised attack on the Protector in England, and their influence made itself felt in Ireland in a general sense of trouble and unrest. 'It is the worms or vipers lying in the gutts of the Commonwealth,' Henry Cromwell wrote home to Lord Fauconberg, 'which have caused the frettings and gnawings you mention; and this I rather believe, because of the five hundred maggots which you say are now again busily crawling out of the excrements of Mr. Freak's corrupted church.'⁹ 'I never lived a more miserable life than now,' Dr. Petty wrote to Robert Boyle.¹ But, supported as he was by Henry Cromwell, he could have continued to defy his enemies, if at this critical moment the death of the Protector had not altered the whole character of the political situation, and threatened to expose him to far more serious dangers than any which he had hitherto had to fear.

⁸ *Down Survey*, ch. ix. p. 80; ch. x. pp. 102-103. *Brief Account*, p. xvii.

⁹ Freak was one of the leading preachers amongst the Fifth Monarchy

men.

¹ H. Cromwell to Viscount Fauconberg, February 10, 1657; Thurloe, vi. p. 789; Boyle's *Works*, v. 298.

‘How hard it is,’ Henry Cromwell wrote, on the arrival of the news of the illness of his father, to Secretary Thurloe, ‘to reflect upon the consequences of his Highness’ death, and yet cheerfully to kiss the rod! If wee may speak as men, if no settlement be made in his lifetime, can we be secure from the lusts of ambitious men? Nay, if he would declare his successor, where is that person of wisdom, courage, conduct, and, which is equivalent to all, reputation at home and abroad, which we see necessary to preserve our peace? Would not goode men feare one another and the worlde them? Would not the sons of Zeruah bee too strong for us, and the wheell be turned upon us, even though the most wise and powerful single person could be chosen out?’²

All the pent-up passions and jealousies, which had been kept under restraint by the stern determination of the deceased Protector to maintain the framework of a regular government, were now let loose. The pure Parliamentarians or Commonwealth men, most of whom had been in retirement since the dispersion of the Long Parliament, came forth from their hiding-places, believing that the future lay with them, and that the hour of real liberty was at length at hand. A struggle at once commenced between them and the adherents of the dead Protector; and both eagerly courted the army, in which Sankey and his Anabaptist allies were powerfully represented. The Fifth Monarchy men believed that the second advent of Christ was not far distant, and justified themselves by visions and by the ominous signs of the times. The Royalists, with a keen eye for the quarrels of their adversaries, believed the return of Charles II. to be a more probable event; and whether belonging to the Cavalier or Presbyterian section of the party, determined to miss no opportunity of embarrassing the Government. ‘Great endeavours being used by some, upon the death of Oliver Protector, for a change of Government,’ Dr. Petty writes with reference to this period, ‘it was thought convenient to begin the ruin of that family, with pulling out the smaller pins of that frame wee were in.’ One of those ‘pins’ the Doctor

² H. Cromwell to Thurloe, September 3, 1658. Thurloe, vii. p. 376.

knew himself to be; and he noted the probability of the assembling of a very factious Parliament.³ Signs of coming trouble were soon apparent.

At the latter end of 1658, an anonymous pamphlet had been issued in Dublin, during the Doctor's absence in London, whither, as already seen, he had gone to attend the Committee of the Adventurers; and copies were sent to Secretary Thurloe and others. This pamphlet began by reciting how he 'had the opportunity of the Lord Deputy and Ladye's ear, as well as being his physician, and as complying with the then predominant party.'⁴ It compared Henry Cromwell to Henry VIII. and Dr. Petty to Cardinal Wolsey; and concluded with a long series of general charges of dishonesty and malversation. 'A simple and malicious paper, which truly I sett nothing by,' Thurloe wrote to Henry Cromwell.⁵ The latter at once referred it to a body of forty leading officers to examine, and these officers appointed a committee on the matter,⁶ which recommended the preparation of a reply by Dr. Petty and his colleagues on the Committee of Distribution, in the shape of an authentic book and record to show in detail what had been done with the army's security. An order to this effect was issued by the Irish Council on December 20, 1658, and it proceeded to appoint another committee, on which Sir Hierome himself, Gookin and King had places, to consider the matter.⁷

The pamphlet had been inspired by, if it was not the actual work of Sir Hierome himself. The grievance specially put forward related to the liberties of the city of Limerick, the charge made being one to which Dr. Petty's connection with the family of the Protector gave a special colour; for these lands, then as now reputed amongst the best in Ireland, had been claimed by the Council as lying within the city, and had been principally allotted to the gentlemen of the Life

³ *Down Survey*, pp. 258, 271.

⁴ He took no salary for his duties as Private Secretary to Henry Cromwell and Additional Clerk to the Privy Council from this date, and gave up

private practice as a doctor. *Reflections*, p. 126, and Will.

⁵ Thurloe, vii. p. 282.

⁶ *Down Survey*, ch. xvi. p. 258.

⁷ *Ibid.* ch. xvii. pp. 264-269.

Guard and the officers of the artillery train. A portion had been elected by Dr. Petty, with the consent of the Council, as part of his salary as Commissioner of Distributions, at the Act rates. Sir Hierome and his supporters contended that the Limerick lands ought to belong to one Colonel Wentworth, under the ordinary system of boxing,⁸ as forming part of the county which had been allotted to the soldiers. The old grievance in regard to the decision of the Council to pay part only of the actual value of the army claims, reserving the balance to help to clear off the debts of the Commonwealth and to pay the expenses of the survey, was also again brought forward, to impart an additional sting to an already sufficiently embittered contest.

Dr. Petty, considering the character of the attacks made upon him, and that it was generally put about that he was shortly to be arrested, 'and as in consequence there was nor table nor tavern in Dublin unprovided of a theame to discourse uppon for days together,' determined to carry the war into the enemy's camp. He therefore drew up his reply to show that, if accounts were to be strictly gone into, the State was still his debtor. A memorial to this effect he placed before the committee of officers, with facts and figures in support, as he had nothing to keep back and everything to gain by publicity. The committee referred it to Mr. Jeoffreys, a member of their own body, who appears to have been a professional accountant. His report being favourable to Dr. Petty, four of the committee, Mr. Roberts, Mr. King, Mr. Jeoffreys, and Vincent Gookin, drew up a report favourable to him; but the officers of the committee refused to sign it, because it pointed to the Doctor's having more land, which was against the intention of the army.⁹ Then, Sir Hierome alone dissenting, they drew up a counter report to that effect, and without making any charges of dishonesty or corruption. To the counter report the Doctor drew up

⁸ *Down Survey*, ch. xvii. pp. 281, 285; Prendergast, p. 111.

⁹ *Ibid.* pp. 274, 275, 276, where the documents are printed. It appears

that Dr. Petty had been compelled to sell part of his debt to a Mrs. Carey, whose name appears at page 275, probably to raise ready money.

an answer, and the dissentient officers again replied, when suddenly at this point the controversy was transferred by the action of Sir Hierome himself from Dublin to Westminster.

On January 27, 1659, the Parliament summoned by Richard Cromwell had met, and Ireland sent members to it. It had been the object of the late Protector to rally to himself the greatest possible number of members of the conservative classes of society, but as the majority of these were Royalists or Presbyterians, the choice was limited. Following the same line of policy, Thurloe now determined to try to strengthen their forces by the election 'of five or six good argumentative speakers.' Amongst others the name of Dr. Petty recommended itself to the managers,¹ with those of Mr. William Temple, Mr. W. Domville, of Lincoln's Inn, Vincent Gookin, Sir A. Morgan, and Admiral Penn. Dr. Petty was accordingly returned as member for West Looe in Cornwall, and also for Kinsale. Vincent Gookin was returned for Youghal.

The following letter from Vincent Gookin to the Lord Deputy contains an interesting account of the humours of an Irish Election in 1659 :—

*Vincent Gookin to the Lord Deputy.*²

'May it please your Excellency. Having your Excellencies free leave to attend this Parliament, or chuse another in my place, I pitcht upon Doctor Petty upon these grounds. 1st, hee is a person of excellent parts. 2ly, noe person I thinke in the 2 nations can doe more to the settlement of the army and adventurers than hee. 3ly, the good the army will certainly receive by his management of their affayres in the House, will convince them that they canot harme him without injuring themselves, and possibly that they doe ill if they love him not. 4thly, hee is (I humbly conceive) fit for such worke, and will goe through with it, which is too hard for such as I am and many others noe wiser than myselfe, to

¹ Dr. Clarges to Henry Cromwell December 8, 1658. Thurloe, vii. 553.

² Lansdowne MSS., Brit. Museum, 822, f. 23. The letter is a proof of the

singular independence of character of Vincent Gookin, as Lord Broghill was at this moment strongly supporting the Protector.

deale with. 5ly, his abillity and honesty, joyned with the good will and honesty of the other two Parliament men chosen for this county and the citty of Corke, will contribute much to the good of these places and make us love him who, I conceive, deserves it.

‘When I came to Corke, I found my Lord Broghill had engaged some of the wisest of Corke Corporation, without the consent of the brethren and the freemen of the Citty, to chuse Lieut.-Col. ffoulkes; and that Bandon and Kinsale had in their owne courts chosen mee. Those of Corke and Youghall, on my desire to keepe themselves free, till they had consulted with the other townes about their members, bemoaned the losse of their liberty, but however those that were bound gave those that were not, encouragment to keepe their liberty, till they heard more from mee. From Corké I went to my Lord Broghill, desired his assistance, that Corke might be persuaded to chuse Doctor Petty, and Kinsale to chuse Pen. The last hee consented; to the first hee refused; alleading it could not be done without dishonouring him, though I made noe question but to get Lieut.-Col. ffoulkes his consent to it, which if Lieut.-Col. ffoulkes should grant, his Lordship sayd hee would take very ill from him. Thereupon I gave up thinking to doe any thing in Corke, and returned to Kinsale and Bandon, propounded Doctor Petty to them, shewing them that their election of mee oblidged them to mee, and their chusing Doctor Petty, at my request oblidged him too; to which upon the arguments used by mee and their confidence in mee, they consented; provided if Corke and Youghall would chuse mee I would serve them, to which purpose they wrote a letter to those of Corke and Youghall, which I delivered them, and in open court told them that in performance of my engagement, I would serve them if they thought fit to chuse mee; but withall advized them to consider of their engagement, and that I desired it not from them, unless they thought fit; and untill that time I never told them or any of them, or any other, that I had any purpose to propound my selfe to heir election.

‘This was Tuesday last in the morning. It was the

Thursday before, that I was with my Lord Broghill, who in meane time wrote about 2 dozen of letters to Corke to engage them for ffoulkes, and had appointed particular agents to consult with every free man in the citty, which they did at the law offices and other such like eminent places. All this while I was not thought of, but when I came to be thus opposed, such a distraction grew that grieved mee. His Lordship upon this alarme came soe frighted to Corke, that hee prevented mee in shewing him how I intended his Lordship noe harme in it; and that his speaking but one word to the Kinsale and Bandon people, to have quieted mee of my engagement to stand for Corke and Youghall, had absolutely removed mee out of his way, who was as much afrajd of going to the Parliament as his Lordship was of my ellection. His Lordship as soone as hee came to Corke, and the solemnities of his coming performed, went to the Court and there rayled upon mee and magnified his owne services. Wheather his Lordship did himselfe any good in it or mee hurt, others more indifferent to judge will ere long informe your Lordship.

‘Upon the coming of the Bandon and Kinsale people to Corke, I desired them for quietness sake to free me from my engagement, which they, (unspeakably kind to mee in everything) granted, and thereupon I signified soe much to the citty: all which notwithstanding, I assure your Lordship that in the towne hall at the election of Lieut. Col. ffoulkes, his Lordship had with him but one alderman upon the bench and one in the crowd, and not above 30 of 400 freeholders in the citty at the election, but his Lordships owne people cryed up Lieut. Col. ffoulkes. And I doe profess to your Lordship that I did not in all that time by myselfe or any other in the least measure interpose in the election, or speake to one person on my behalfe, though his Lordship doubting mee, sent to their owne lodgings, for more than 100 of the freeholders, man by man, and engaged some: others refused. Thus much I have presumed to acquaint your Excellency, because I know his Lordship will endeavour to prejudice mee. There are many particular passages in the carrying on this business, by which when I have the honour to waite on your

Excellency, I shall make it apeare that I designed the election of Doctor Petty, without offering in the least to prejudice his Lordships honour, or thuart his purpose, unless against Dr. Petty, which I confess I should have done, and did, and doe hope I have not done amisse in it. I know my Lord I have not bin in my Lord Broghill's favour these many yeares. Hee now tels the people but what I knew before: that hee is my enemy. I beseech your Lordship to suspend your judgment of this difference till you heare mee speake for my selfe, who am

‘ My Lord

‘ Your Lordships obedient and
faythfull servant

‘ VIN. GOOKIN.

‘ Kinsale, Jan. 21, 1659.’

Having been elected for two places, Dr. Petty had to choose between them, and selected West Looe. Meanwhile, Sir Hierome had been elected for Woodstock, and at once sounded the note of attack.

Dr. Petty went to Westminster armed with a letter from the Lord Deputy to Secretary Thurloe. ‘ The bearer,’ Henry Cromwell wrote, ‘ hath been my Secretary and Clerk of the Council, and is one whom I have known to be an honest and ingenious man. He is like to fall into some trouble from some who envy him. I desire you to be acquainted with him, and to assist him whenever he shall reasonably desire it. Great endeavours have been used to beget prejudices against him, but when you shall speak with him, he will appear otherwise.’³

On March 24, 1659, Sir Hierome in his place in the House had already impeached Dr. Petty. ‘ I open,’ he said, ‘ the highest charge against a member of this House that ever

³ June 1659. See Ward, *Lives of the Professors of Gresham College*, 1740, p. 220, who says the original is from a collection of letters ‘ now in the hands of Henry Cromwell’s grandson,

W. Cromwell of Gray’s Inn, Esqre.’ The date given is June 11, 1659, but it would appear to be of a slightly earlier date in that year.

was ; such news has not been of a long time : a high breach of trust. It is against a great person—the charge consists of several articles : (1) bribery ; (2) imposing money and lands. He is both cook, caterer, and is Commissioner and Surveyor ; has had the disposing of two million acres of lands. He is a man of great parts, and has greatly wronged them. His name is Dr. Petty.’ He then proceeded to develop his charges.

A debate ensued, in the course of which the good service the Doctor had rendered to the State, and the vexatious proceedings to which he had already been exposed in Ireland, without any malpractices having been proved against him, were urged on his behalf by Sir A. Morgan and Mr. Annesley. Finally it was ordered, ‘that William Petty, Doctor of Physic, a member of this House, be appointed to attend this House, on this day month, to answer the charge.’⁴

On March 26 accordingly, Dr. Petty received a summons ‘to attend the House’ on April 21, together with a copy of ‘certain articles brought into the House against him.’ They were seven in number, and in substance contained a repetition of those against which he had been defending himself in Dublin, to which was added a mass of vague charges of dishonesty and corruption. The last article contained the sting of the whole matter : ‘That he, the said Doctor, together with his fellow Commissioners, have totally disposed of the remaining part of the Army’s security contrary to law, the debt still remaining, and chargeable on the State.’

Henry Cromwell watched the proceedings from Ireland with the deepest interest. ‘On Friday,’ Dr. Thomas Clarges wrote to him, ‘Sir Hierome Sankey brought a charge into the House, of bribery and breach of trust against Dr. Petty, to which he set his hand ; and, amongst other expressions, he told us he knew so well the danger of bringing a charge of that nature against a member of Parliament, that he would not have done it, but in confidence to make it good. Many of the Long Robe were against the receiving of it till it should

⁴ *Commons Journals*, March 24, 1659. Thurloe, vii. p. 658.

have been digested into particulars, for the charge was general; but at last it was resolved he should be summoned to attend the House that day month; and I believe Sir Hierome finds the sense of the House so much inclined to particularizing his charges, that he is gone to Ireland, to enable him to do it; and yesterday he began his journey. . . . The speech Sir Hierome made before he declared his charge made the business seem very great; but when the thing itself was read, it made but little impression. Mr. Annesly told us the Doctor had been used to things of this nature, but never yet upon any examination could anything be fastened upon him, and he doubted not but he would acquit himself of this.' ⁵

Henry Cromwell, whom Dr. Petty describes as 'passionately affected with the hardships used towards him,' ⁶ expressed his views on the subject to Secretary Thurloe by letter. 'I have heretofore told you,' he wrote, 'my thoughts of Dr. Petty, and I am still of the same opinion; and if Sir Hierome Sankey run him not down with number and noise of adventurers and such like concerned persons, I believe the Parliament will find him as I have represented him. He has curiously deluded me these four years, if he be a knave. I am sure the junto of them, who are most busie, are not men of the quietest temper. I doe not expect you will have leisure or see cause to appeare much for him. Wherefore this is only to let you understand my present thoughts of him. The activenesse of Robert Reynolds, and others, in this businesse, shows that Petty is not the only marke aimed at; but God's will be done in all things.' ⁷

On the day appointed, Thursday, April 21, Dr. Petty appeared in his place and Sir Hierome attempted to make good his charges. The rashness with which in the first instance they had been advanced, was evident from the prosecutor being now obliged to drop the most important of the original set of articles he had exhibited, six in number, and also three of the seven instances of misdoing which he

⁵ Thurloe, vii. p. 639.

⁶ *Reflections*, p. 50.

⁷ Thurloe, vii. p. 651.

had specified in Parliament, and he was driven by the demand of the House to condescend from mere generalities to some kind of particulars.⁸

After he had spoken amid signs of much impatience, Dr. Petty replied in a speech of studied moderation. Having first commented on the vagueness of the charges, and the entire absence of anything approaching to specific counts in the huge indictment and the total lack of evidence, he described the difficulty of the task he had had to perform, the grasping character of many of the men he had had to satisfy, and the impossibility of not making some enemies in so vast an undertaking. He then insisted that the lands he had got had become his, either as direct payment for his work, or as purchases legitimately made by the permission of the Council, after the other claimants had been satisfied; and he again asserted that, if a strict account were to be taken, the State would be found to be still his debtor, and that he had nothing to conceal.

‘I never,’ he said, ‘was surveyor by office, but undertaker by contract, and rather a contriver of the way and method how many surveyors should work, than a surveyor myself. . . . I never meddled with leases or debentures till this surveyorship, such as it was, was at an end; and then, and when the distribution also was over, I got an express and legal leave to buy more debentures than I did. . . . I confess, Sir,’ he went on, ‘there is a singularity in the modes of one or two of my satisfactions, but this singularity is a prejudice to no man but myself; a convenience to some; and an advantage to the State.’⁹ The practices I have used as Commissioner and Surveyor,’ he continued, ‘are such as I can glory in; that is to say to have admeasured 22 Counties in thirteen months’ time, with the chaine and instrument; to have done this by the ministry of about one thousand hands, without any suit of law, either with my superiors, or with

⁸ *Reflections*, p. 68.

⁹ See Burton’s *Diary*, iv. p. 469; *Reflections*, p. 95. Dr. Petty’s speech, reported by himself, and Sir Hierome’s

reply, are to be found at p. 292 of Sir Thomas Larcom’s edition of the *Down Survey*.

them; to have maintained this survey stiff and staunch against the impugnation of some thousand diligent fault finders; to have freed myself and my sureties by the consent and mediation of forty-five officers of the Army; a greater number, Mr. Speaker, than usually voucheth any Act called the Army's; to have assigned satisfaction for above twenty thousand debentures, as that admitted of no dropping and changing afterwards; and so as a slight copy out of our book is accepted in Courts of Justice as good evidence, merely by virtue of the natural justice and validity whereupon it stands; to have done this under the eye of the chief authority, without ever receiving any check or reproofe for what was done; or without being bid so much as to take heed, or do so no more; and, which is more than all, Mr. Speaker, that God gave me courage to oppose the greatest persons, though always with due respect to their condition, merely to obtain strictness of rule; although those worthy persons have afterwards accompted our severity their security, and have thanked us for it. The truth of it is, Mr. Speaker, this kind of severity to those that could not bear it but made us enemies; whereas corrupt partiality would have made us a kind of friends; and this is not the course of corrupt and wicked ministers.' ¹

The House of Commons seems to have been inclined to regard Sir Hierome and his charges with considerable impatience. Possibly they had heard of Mr. Wadman and of 'Tuggin.' The accounts of the debate suggest the reflection that Parliamentary human nature in the days of the Commonwealth was much as it is now. Members begin rising to order and asking Mr. Speaker: 'I wonder you, Sir, so much forget yourself as to hearken to private quarrels, and neglect the public.' Then, 'the House fell a talking with one another.' Then somebody moves that 'the gentleman bring his charge in writing,' and so on. Eventually the House, 'after that they had tryed by interrupting and downright jeering Sir Hierome to stop his mouth, did in order to be rid of him order that he should put his charges into writing, and that

¹ *Down Survey*, ch. xxiii. p. 292.

the complaints he made of the retention by Dr. Petty of certain maps and plotts, which he asserted ought to have been deposited with the others, with the Surveyor General, should be referred to the Lord Lieutenant of Ireland, to deal with according to law.' ²

These maps were the 'originals,' or first editions, of the maps of the forfeited lands with which, it has been seen, Dr. Petty was himself dissatisfied, and corrected editions of which he deposited in the Surveyor-General's office against the distribution; and also the rough sketches of the smaller 'plott' maps of the allotments as set out to each claimant. All these he claimed to be his own private property; but he offered to part with them at reasonable rates, if his adversaries thought they could be of the smallest practical use to them, or to anybody else. ³

The day following Dr. Petty's speech Parliament was dissolved. The danger for the moment was over, and he at once made for Ireland. 'Dr. Petty is all at large,' Lord Fauconberg wrote in cypher to Henry Cromwell, who probably feared he might be forcibly detained. ⁴ He was gone to meet General Fleetwood and confer with him before returning to Ireland. On his way thither he wrote to Henry Cromwell:—

'May it please your Excellency.—Sir Hierome beeing now a very great man and one of ye Committee of Safety, did in a manner command mee to stay here, declaring his pleasure to have mee presented another way, &c. Neverthelesse when nothing else hind'red I came from London without his leave. Your Excellency will have fresher newes by the post than any I can write. Wee overtooke a Troop sent into Wales for what new purpose I know not. Gr. Henry Pierce and Lieut.-Col. Stephens are here at Neston. Majr. Aston upon the way. People take the late transactions very patiently. I hope I shall

² *Reflections*, pp. 72, 95; *Down Survey*, p. 300.

³ See note at the end of the last chapter as to the maps. See also *Reflections*, pp. 36, 37. Compare Mr. Hardinge's remarks in the volume of the *Transactions* to which reference

has already been made. He thinks Dr. Petty on the whole ought not to have been allowed to retain the maps.

⁴ October 12, 1658. *Thurloe*, vii. p. 437. See, for the letter to Richard Cromwell, *Thurloe*, vii. p. 400.

be permitted to proceed with my Vindicacion at Dublin, if this be a time for any particular busines lesse then the preservation of the whole.

‘I remain

‘May it please your Excellency

‘Your Excellency’s most obedient
and faithful servant

‘WM. PETTY.⁵

‘Sir Ant. Morgan thinks of
retiring to Tame Park this summer,
but is at present at Chelsey,
‘Neston, 5^o May 59.’

Dr. Petty brought with him to Dublin a message from General Fleetwood, urging the Lord Deputy to come over at once for consultation on the perilous situation of their affairs. Henry Cromwell, however, thought it was impossible to desert the helm of Government in Ireland, though conscious that they both might at any moment be swept away by the rising storm, and he resolved to send over Dr. Petty again to state his views.

In May the restored Rump Parliament met, and on the 26th of the month the Republican party obtained the resignation of Richard Cromwell. They also passed a resolution calling on Henry Cromwell to come over to London at once to report. Dr. Petty had meanwhile left for England, the bearer of a confidential letter to Richard Cromwell, containing the Lord Deputy’s views on the situation, and of the following letter to General Fleetwood, evidently written under a great sense of discouragement:—

Henry Cromwell to General Fleetwood.

‘I received yours of the 7th instant, whereby and by divers other letters, I take notice of the votes in Parliament concerning my coming to England. That news has so many odd circumstances, and such animadversions are made upon it, as I think it much concerns me to know the meaning with all the

⁵ Lansdowne MS., Brit. Mus., 823, f. 36.

speed I can. To which purpose I have sent the bearer, Dr. Petty, unto you, as one whom I can best trust, now my nearest concernments are at stake. Wherefore I desire you to show your kindness to me in being free and plain with him, as to such advice as you think concerns my preservation, (for I am well contented to aim at nothing else), and especially how I shall behave myself in reference to the summonses for my coming over, when I receive them. I have made so good use of my time, as I have not money to bring me. Pray give the bearer access to you upon my account; he does not use to be tedious or impertinent. It concerns me to have one that I can trust, to have such an access to you. I hope that you will not look upon him, as to me, under the character and representation that Sir Hierome Sankey and some others may give of him; but rather as one, that hath been faithful and affectionate unto me, and I may say unto yourself also; and one who I think, notwithstanding all that is said, is a very honest man. I shall not trouble you with much more. He can best acquaint you with what concerns myself, upon which single account I have gotten him to come for England. As for the public differences, I never perceive him forward or busy in any.

‘Dear brother, these are times of tryall, both as to our own hearts and our friends.’⁶

When Dr. Petty arrived in London, he found the Republican reaction at full height. A general onslaught had commenced on the Cromwellian party, which was driven from place and power. Henry Cromwell was recalled from Ireland, and Ludlow, with two other Parliamentary Commissioners, was sent over to replace him. Dr. Petty was dismissed from all his appointments as a matter of course. The Parliament was overawed by the officers of the army, and Sankey became one of the most prominent and violent of their mouthpieces in the meetings at Wallingford House. Through his friends in

⁶ H. Cromwell to Fleetwood, June, 1659, the arrival of Dr. Petty and Col. Edmund Temple as ‘the bearer of letters’ is mentioned. 1659; Thurloe vii. p. 684. In the *Mercurius Politicus*, June 16 to 23,

Parliament he at once recommenced his attack on Dr. Petty ; but with no great success, as, although the tribunal to which he now appealed was far more favourable to him, he only succeeded in getting the whole matter once more referred back to the Parliamentary Commissioners for Ireland. He next appears as one of the military junto which called together the Committee of Public Safety, and helped Lambert to drive out the Rump. Then, believing himself to be at last master of the situation, he immediately threatened to detain Dr. Petty in London by force ; but Dr. Petty availed himself of the general confusion to escape to Dublin, which, of the two cities, was then the safer place to abide in.⁷

Sankey soon after left London to command the regiments from Ireland in Lambert's army in the North of England. Thence, after vainly attempting to get Dr. Petty sent over a prisoner to England, he plied him with threatening messages, assuring him that the army would support the Brigade's proposals and his own complaint, and that he would show no quarter.¹ These threats were, however, nullified by the series of events which, beginning with the reinstatement of the Rump by Monk, the overthrow of Lambert and the recall of the ejected members of the Long Parliament, ended in the restoration of the King, which had for some time past been generally recognised as the only way out of the existing confusion.

In another field, however, Sir Hierome, during the brief supremacy of the Rump, was able to aim a successful blow at his antagonist. On August 9, 1659, it is recorded in the books of Brasenose College that Dr. Petty was deprived of his Fellowship. His long absences in Ireland, and, still more, his acquisition of landed property, were solid grounds for urging that he was now disqualified ; and it is perhaps not too much to surmise that the watchful eye of the militant Fellow of All Souls took care that, in an age singularly lax on these matters, the disqualification in question should be observed, at least at Brasenose.

After the fall of Lambert, Dr. Petty, though freed from all immediate fear of Sir Hierome and his Anabaptist allies,

⁷ At this point the history of the *Down Survey* terminates.

determined to appeal to the tribunal of public opinion; and published a short pamphlet entitled 'A Brief of the Proceedings between Sir Hierome Sankey and the Author,' and also the little book already quoted in the course of this narrative, entitled 'Reflections on Certain Persons and Things in Ireland.' In these works he unveils, from their very commencement, the whole of the doings of Sir Hierome and his adviser Worsley. His leading adversaries, he points out, were a corrupt clique of Anabaptists, hostile to the Cromwell family for refusing to be governed by them, and to himself because of his views on religion and his perhaps imprudent satires. 'Jews, Christians and Mahomedans,' he says, 'notwithstanding their vast differences, do not make so much noise and squabble as the subdivided sectarians do, their animosities being so much the greater, by how much their differences are smaller. Upon which grounds some with too much truth, as well as too much looseness, have pronounced that gathering of churches may be termed listing of soldiers.'⁸ . . . 'melancholy, jealous, discontented and active spirits,' he goes on, 'who find fault with the administration of the Survey, as they do with the Sacraments, and with the distributing of land as well as dividing the word; carrying them as fiercely to pull down Dr. Petty as the Protector or the Priests,' 'and to be esteemed as worms and maggots in the guts of the Commonwealth.'⁹

In regard to the general charges of bribery and corruption advanced by Sir Hierome in Parliament and brought before the Irish Commissioners, he dwells with great satisfaction on their discrepancies. He also points out that those which had survived to be brought forward in Parliament had not a shred of evidence to support them, and were not in the report which had been made in Ireland by the Court of Officers appointed to examine the matter. He then urges that no suspicion had ever been suggested against him in his offices of Clerk to the Council and Private Secretary to the Lord Deputy, offices in which his opportunities were enormous and

⁸ *Reflections*, pp. 92, 93.

Reflections in 1660. Wood (*Ath. Oxon.*)

⁹ *Ibid.* p. 119. The *Brief* was published in Dublin in 1659; the

says they were also published in London.

the chances of detection slight; that General Fleetwood, the predecessor of Henry Cromwell, had as steadily defended his reputation as Henry Cromwell himself; that the world was asked to believe that he had been guilty of corruption in matters where detection was almost certain, and had not been guilty of it where detection was improbable; and that he had succeeded not only in deceiving his colleague, Sir Thomas Herbert, Clerk to the Council, but also his colleagues on the Commission.

In regard to the charge of arbitrarily withholding lands from the army, which was the principal count, his reply was the simple and obvious one: that the decision to withhold the lands in question from the general distribution was a decision of the Council, and not his own; and was made in conformity with law; and that he personally had no kind of responsibility for it.¹ As to his having chosen his own satisfaction from these lands, he again asserts his own right to be paid somehow for the immense work he had done, and that the decision to pay him in land and in this manner was also an act of the Council done in conformity with the Statute, and one highly convenient to the State, at a moment when there was an absolute dearth of ready money in the Treasury, while land was going a-begging. At that time indeed men bought as much land for ten shillings in real money as at a later date yielded the same sum annually above the quit rent.² As to his having subsequently bought debentures and bought them under market rates, which Sir Hierome had mentioned to prejudice him in the eyes of the House, he points out that, in the first place, it did not lie with either Sir Hierome or Worsley to complain, because they had themselves dealt largely in purchases of land from the distressed soldiers at very low rates, contrary to the express provisions of the Act of 1653; while he had himself not entered the market till after those prohibitions were no longer operative, and as a rule had dealt with the debenture brokers, and not with the original allottees of land, so as to place himself beyond the

¹ *Reflections*, pp. 28, 29, 39, 136.

² See the statement to this effect in his will.

suspicion of bringing pressure to bear on the distressed soldiery individually, as long as the latter were still themselves the holders of land debentures.³ He concludes with an elaborate calculation to show that, without ever meddling with the surveys at all, he might have acquired a far larger fortune by simply following the example of others and investing his own small savings in Irish land debentures at the current market rates. As to the criticisms which had been made that he was unduly satirical in his treatment of some of the claimants, he admits it; but pleads that he was 'forced to restrain the growing impertinences of some, with very short answers, and to nip the unreasonableness of others, perhaps with a jest, when serious answers would not suffice. It came to pass in consequence that persons so dealt with would think themselves extremely injured and abused, especially when the same jest was used and repeated upon them by others afterwards.' 'Myself, in such their heats and mistakes,' he says, 'was rendered as an insulting and insolent fellow, and one not having due respect to the officers and others who had business with me. And this most frequently happened from those who, trusting to the sharpness of their own wits, would first attack me with jeers, but being replied upon beyond their expectations, and deservedly laughed at by the standers-by, would grow angry, and seek their revenge at other weapons, like gamesters; who—out of the high opinion they have that fortune is bound to favour them—venture to play, but when they find it otherwise, snatch up their stakes, and betake themselves to scurrility and violence. Moreover, when I had to do at this sport with many together at once, all those who were not themselves touched, would encourage this jocularity by their complaisant laughing, on my side; but yet when they happened to receive a shot themselves, would seem no less enraged than he whom alone they intended as a sacrifice to mirth and laughter.' His conduct in this respect he acknowledges may have been imprudent. 'For what they say about my satire I accept it,' he says, addressing the imaginary correspondent to whom the 'Reflections' are a reply; 'but those versipelles,

³ *Reflections*, pp. 24-36.

Sankey and Worsley, have shrouded themselves under all parties, and have done scurvy acts to advance every rising interest. I could not therefore hit these vermin without beating the bushes wherein they skulked.' ⁴ And he then roundly accuses both Worsley and Sankey, interspersing his charges with a good deal of rather Rabelaisian wit, of having attempted to induce him to become a party to several doubtful transactions to their own advantage, in regard to lands at Clontubride bridge and Lismalin; 'indeed,' he says, 'the whole body of future proprietors were always forward with bribes to tempt me.' ⁵

But, although confessing the dangers he had brought on himself by the imprudent use of his wit, the passion was nevertheless still strong within him, and before he gets to the end of his 'Reflections' he announces how, in addition to a graver work containing the history of the survey, he will write 'another piece of quite a contrary nature; being indeed a Satyre, which though it contain little of seriousness, yet doth it allow nothing of untruth.' 'Tis a gallery,' he announces, 'wherein you will see the Pictures of my chief adversaries hanged up in their proper colours; 'tis intended for the honest recreation of my ingenious friends. . . . To prepare myself for which work I will read over Don Quixote once more; that having as good a subject of Sir Hierome as Michael Cervantes had, something may be done not unworthy a representation in Bartholemew Fair.' Meanwhile, he says, he looks forward to returning to his too long neglected medical studies and the other pursuits which he had been tempted into leaving, in order to embark on the stormy seas of practical affairs. ⁶

It was now safe to remain in London, for Monk had occupied Westminster and Sankey had disappeared. The anxious period which preceded the Restoration accordingly found Dr. Petty in the society of his old scientific friends, many of whom had now settled in the capital. On March 10, Pepys notes in his 'Diary' that Dr. Petty was one of

⁴ *Reflections*, pp. 27, 117, 174.

⁵ *Ibid.* p. 131.

⁶ *Ibid.* pp. 61, 154.

a party at the Coffee House, 'with a great confluence of gentlemen, where was admirable discourse till nine at night.'⁷ The discourse just then was no doubt as much political as scientific, for the future of the State was the absorbing topic of thought and discussion, and Monk's intentions were as yet doubtful.

There was at the time a club called the 'Rota,' which met at Miles's Coffee House, in New Palace Yard, under the auspices of Harrington. 'In 1659,' says Anthony Wood, 'they had every night a meeting, . . . and their discourses about government and of ordering of a Commonwealth, were the most ingenious and smart that ever were heard; for the arguments in the Parliament House were but flat to those. This gang had a balloting box and ballotted how things should be carried by way of *tentamen*, which being not known or used in England before, upon this account the room was very full. Besides our author (Harrington) and H. Nevill, who were the prime men of this club, were Cyriac Skinner, a merchant of London, an ingenious young gentleman and scholar to John Milton, . . . Major J. Wildman, Charles Wolseley of Staffordshire, Roger Coke, &c. . . . Dr. William Petty was a Rota man, and would sometimes trouble Harrington in his club. The doctrine was very taking, and the more so, because, as to human foresight, there was no possibility of the King's return. . . . The model of it, the design, was that the third part of the Senate, or House, should *rota* out by ballot every year, so that every ninth year the said Senate would be wholly altered. No magistrate was to continue above three years; and all to be chosen by ballot, than which choice nothing could be invented more fair and impartial, as 'twas then thought, though opposed by many for several reasons.'⁸

England at the time was not merely divided between the partisans of Royalty and those of a Republic. There was a further question at issue, one which went down to the very roots of the question of Government: was the will of the people to be collected from the votes of the elected representatives in

⁷ *Diary*, vol. i. p. 16.

⁸ *Athenæ Oxonienses*, ed. 1817, vol. iii. p. 1119; Ward, *Lives of the Professors of Gresham College*, p.

221. Compare Milton's *Ready and Easy Way to Establish a Free Commonwealth*, where the 'rota' plan is discussed.

the House of Commons solely, and was all executive authority to be held in strict subjection to that House ; or was the scheme of Government to be that ‘ of a single person and two Houses of Parliament,’ as established by the ‘ Instrument of Government ;’ in other words, was the Government in theory to be strictly democratic, or was it to be fixed on bases in some degree independent of the popular will as reflected in the House of Commons, and to represent elements anterior to it in point of time, or considered superior to it in point of authority or knowledge ? The Royalists and the Cromwellians both answered the question in favour of the latter alternative. Their differences began when they had to decide who the single person and what the composition of ‘ the other House of Parliament ’ was to be. Between them was the blood of Charles I., and there was thus an ineradicable difference in the camp of those who agreed in principle. But neither were the pure Republicans nor Commonwealth men in any but the most difficult of positions, for they were not the majority of the nation, but only an energetic minority, in some respects in advance of their times, though not in all. In their hearts they had to acknowledge that if the voice of the people was consulted in a really free Parliament, as they professed to desire, the first popular demand would be one for their own expulsion from the Government, whatever else might follow. They were therefore constantly occupied with devices for staving off the day of the dissolution of the Rump. In substance their claim was that a majority in an already discredited assembly was privileged to overrule the real opinion of the country, to which they were unwilling to appeal ; and meanwhile they were occupied with plans for substituting in the place of a real appeal—whenever the inevitable moment at length came—some artificial scheme of their own arrangement, which, while keeping their promises to the ear, would enable them to elude the true verdict of the nation, and renew their own tenure of power.

Meanwhile the situation of the Cromwellian party grew desperate. ‘ Will not the loins of an imposing Anabaptist or Independent be as heavy as the loins of an imposing prelate

or presbyter ? ' Henry Cromwell asked Fleetwood.⁹ ' Were they not placed,' he asked his brother in the secret letter of which Dr. Petty had been the bearer, ' between two almost equal dangers, on one side the Cavaliers, on the other a combination of pragmatistical men ? ' ¹ The answer to these questions was unfortunately only too clear. ' It may be the best way,' Thurloe had bitterly observed, a short time before the death of the Protector, ' to fancy ourselves in the condition of Israel in the wilderness. . . . Truly I should rejoice to be in this condition, if these gentlemen had as sure a guide as the Israelites.' ² But that guide was not now forthcoming.

Dr. Petty had served the Cromwell family, not the Commonwealth. Himself, up to a certain point, a political disciple of Hobbes, he had recognised in the Protector and in Henry Cromwell men who could govern ; but he had seen their efforts thwarted and finally destroyed by the wranglings of the fanatics, who, having got the control of the army, had made all government impossible since the month of September 1658. They had singled him out as one of the special objects of their animosity, and their success would have meant his ruin. The violence of the sects was odious to him. In theology his views were large and liberal, and his mind was that of a disciple, not of Calvin, but of Bacon ; though the theologian and the philosopher nearly always touched each other in the scientific men of the seventeenth century. With reference to the problem of government, it may be clearly inferred from his subsequent writings that he desired to see the executive authority placed in the hands of a single person, whether King or Protector ; and he wished radically to reform the composition of the House of Commons, and ' to set up two Grand Committees as might equally represent the Empire, one to be chosen by the King, the other by the people.' But what he dreaded most was anarchy, and by the end of 1659 England was fast drifting into it.

⁹ Henry Cromwell to Fleetwood, loe, vii. p. 400.
October 20, 1658 ; Thurloe, vii. p. 454.

² Thurloe to Henry Cromwell,

¹ Henry Cromwell to Richard Cromwell, September 18, 1658 ; Thur-
July 27, 1658 ; Thurloe, vii. p. 295.

If General Lambert had been able to prove himself the possessor of abilities equal to his ambition, Dr. Petty would probably have not unwillingly seen him succeed to the position of Protector, for Lambert was himself the friend of science and a patron of learning. Even if Bradshaw, a very different character, had been able to grasp the Presidency of the Council with the stubborn obstinacy from which Cromwell had evidently more than once apprehended possible danger to himself, Dr. Petty might perhaps have considered the administration at least placed in safe hands; but Bradshaw had just died, despairing of the prospect, amid the quarrels of his own friends and the violence of the rival generals, whose appeals to brute force it was as usual sought to justify as a particular call of Divine Providence. He had sat at the head of the Council of State when, in April 1653, Harrison and Lambert announced the dissolution of the Long Parliament, and his own dismissal. ‘Sirs,’ he had said on that memorable occasion to the intruding officers, ‘we have heard what you did at the House in the morning, and before many hours all England will hear of it. But, Sirs, you are mistaken to think that the Parliament is dissolved; for no power under Heaven can dissolve them but themselves. Therefore take you notice of that.’³ Since then six weary years had gone by: years spent in vain efforts to find a permanent basis of administration and government. Now at length Bradshaw had seen the desire of his eyes. The legitimate Parliament was restored and he sat once more in the chair of the reinstated Council of State. And all for what? Merely to see a vulgar repetition in October 1659 of the scenes enacted in April 1653. The struggle was evidently over. Weak and attenuated with illness, yet ‘animated by his ardent zeal and constant affection for the common cause,’ the old President with difficulty made his way to Whitehall, for the approaches were interrupted. He found Colonel Sydenham invoking the finger of the Almighty as visible in the recent attack of the soldiery on Parliament. ‘I am now going to my God,’ Bradshaw fiercely retorted, ‘and I have not patience to hear His

³ Ludlow's *Memoirs*, i. 357.

great Name so openly blasphemed !' ⁴ With these words he withdrew. A few days after he was no more. The splendid obsequies decreed to him were the funeral of the Commonwealth, just as those of the Protector had marked the end of the Dictatorship. Nobody now remained except Monk, and Monk had already mentally decreed the return of the exiled King as the only measure which could prevent another civil war, in which there would have been not two, but four contending parties, as well as a rebellion in Ireland.

'I,' said Dr. Petty in his own defence, 'finding the Lord Henry Cromwell to be a person of much honour and integrity to his trust as also of a firm faith and zeal to God and to his church, and withall to have translated me from a stranger into his bosom, thinking me worthy of the nearest relation to himself, and who when all tricks and devices were used to surprize me by foul play, would still be careful I might have fair play ; I did (as in justice and gratitude as I was bound) serve him faithfully and industriously. I was his Secretary without one penny of reward. I neglected my own private interest to promote his, and consequently I preferred his interest before any man's, and I served his friends before his enemies. Moreover, because he should not be jealous of me, I became as a stranger to other Grandees, though without the least distaste intended to them. When he was shaken, I was content to fall. I did not lessen him to his enemies. To magnify myself I never accused him to excuse myself. Moreover, though I never promised *to live and die with him*, which is the common phrase, yet I did stay to see his then interest, which I had espoused, dead and buried, esteeming that then and when a convenient time for mourning was over, that if I should marry another interest, and be as fixed unto it as I had been to his, I should do no more than I always in his prosperity told him I would do, if I saw occasion.' ⁵ Therefore, if at the Restoration, in the dedication of some experiments in navigation to the King, Dr. Petty spoke of the change as under

⁴ Ludlow's *Memoirs*, ii. 141.

⁵ *Reflections*, pp. 119-120. 'To *live and die with him*' were the words

used in the Address of Parliament to the Earl of Essex, appointing him general-in-chief in 1642.

the circumstances 'a restitution of the best Government and the immortal nature of right,' and rejoiced 'that good patriots were endeavouring to restore the courses of the Church and State into their ancient channels,' his language was not that of political sycophancy, but represented the sober and mature conviction of the majority of the nation that what was above all things necessary was some kind of settled government, and that anything was preferable to the confusion which had reigned since the death of Cromwell, and the rapid alternations between the rule of second-rate soldiers, the agitation of religious fanatics, and the vacillations of a divided and incompetent Parliament. The maggots had eaten out the guts of the Commonwealth, as Henry Cromwell and Dr. Petty had foreseen. The noble lines in which Milton in after-years lamented the fall of the Republic, the injustice of man, and the inequality of fate, were the dirge of an ideal existing in his own mind, rather than of the reality of existing things. By 1660 the magnates of the Commonwealth were sleeping the sleep of death in Henry VII.'s chapel, from which their corpses were soon to be rudely torn. They had left no political successors, and the days were over when it could be said of the Puritan party, that giants were to be seen rising out of the earth.

The founders of great religions, even in the bygone eras of the world's history, have never themselves been the founders of great States. From the nature of the case it is almost impossible it should be otherwise, because they draw their ideas from a sphere excluding the compromises, the inequalities, and even the injustices, which, in secular affairs, have too often to be accepted as the conditions of the existence of government. Their task is that of destruction—often a necessary task. The same fatality has constantly pursued those who have transported religious ideas into subsequent and often widely different periods, and sought to make them the exclusive basis of political institutions and of civil society. This fatality had now destroyed the Commonwealth. It is true that amongst the party there were men who, either guided by the political instinct of their race, or ani-

mated by examples drawn from the history of ancient Rome rather than from the passions of the Hebrew prophets, understood the limitations which must qualify religious maxims when applied to human affairs. But without the support of the army they were powerless, and the army, since the retirement of Fairfax and the death of Cromwell, had become the prey of enthusiasts, whose views on government, doubtless sincere, were as impossible as those which animated the fanatics of Jerusalem in the last days of the kingdom of Judah. Of the purely political ideas which had inspired the Republican party some took refuge in America, where in New England they found a soil ready to receive them, and likely to produce, as Dr. Petty with true political prescience foresaw, some great movement at a future time, which might astonish the world.⁶ Others lay hid in the ground waiting the seed time of a later age in England. Fear of the political and religious supremacy of Rome, which was the dominant public sentiment of the generation which had fought in the Civil War, and in which Cromwell had found the force which alone rendered the triumph of the Parliament over the King possible, had not indeed ceased to exist, and, as events were before long to prove, could again easily be worked into a fierce activity; but at least for the time it was no longer the mainspring of public action. Since the peace of Westphalia a truce was understood to exist, and with the recognition of the practical independence of Protestant Germany, religious freedom was felt to have been saved. France, for the time, had become a tolerant Power, though a change was near at hand. In England an ever-increasing number of the new generation shared neither the prejudices of the Cavaliers nor the fanaticism of the Puritans. Above all they were weary of perpetual strife. They were statesmen, jurists, and philosophers, resembling the '*parti politique*' which in France had endeavoured at the close of the preceding century, though unsuccessfully, to build up the edifice of civil and political liberty against the encroachments of the Crown and the Papacy, and to prevent the country being rent asunder by theological animosities. To this order

⁶ *Political Arithmetic*, v. 266-269.



of men Dr. Petty belonged by training and by temperament. They were Protestants, but rather by political opinion than through theological conviction, and more by reason of what they denied than of what they affirmed. The prospect to them of the supremacy of the Puritans was as distasteful as that of the supremacy of Laud. In the new reign that was opening many deceptions no doubt awaited them. The forces of intolerance were not yet spent ; and religious hatred, after a short interval, was again to furnish the keynote to the history of the century in Europe. The final battle was only adjourned. Another change of dynasty was to be necessary in order to convince the forces of militant Roman Catholicism that the verdict of the reign of Elizabeth was not to be reversed ; to compel the Church of England to see that passive obedience and the divine right of kings were doctrines invented by and for the benefit of civil rulers and not of Churches ; and to make the Puritans acknowledge that they were not the majority of the nation, and must consent to eschew any claim to domination over the intellectual freedom of their countrymen. Meanwhile the mass of the people, never disposed at any time to take long views of public affairs, and always inclined to deal with the immediate question of the hour without looking much beyond it, eagerly welcomed the restored King, and attributing to him qualities which he neither possessed nor claimed to possess, shut their eyes, in the intoxication of the hour, to whatever dangers might lie beyond, in what they deemed a dim and distant future.

CHAPTER IV

DR. PETTY AND THE ROYAL SOCIETY

1660-1667

Meetings at Gresham College—Dr. Petty and the King—Knighthood—The ship ‘Experiment’—Launch of the ‘Experiment’—Sir William Petty and Mr. Pepys—The ‘Scale of Creatures’—Dr. Petty and the Churches—Unitarianism in the seventeenth century—Concerning the Plagues of London—Mechanical experiments—Design of a steam-vessel.

It has already been seen that the formation of a permanent ‘society of men,’ as careful to advance arts as the Jesuits to propagate religion, was a favourite idea with Dr. Petty. Such an association it was now determined to found.

Most of the members of the Philosophical Society of Oxford had by 1658 removed to London; but they continued their meetings, the trysting-place being fixed at Gresham College; and there, on November 28, 1660, a decision of momentous consequence for the future of scientific research was adopted.

In the Journal of the Royal Society the first official record is :

‘Memorandum that, November 28, 1660, these persons following, according to the usual custom of most of them, mett together at Gresham College, to hear Mr. Wren’s lecture, viz., the Lord Brouncker, Mr. Boyle, Mr. Bruce, Sir Robert Moray, Sir Paule Neill, Dr. Wilkins, Dr. Goddard, Dr. Petty, Mr. Ball, Mr. Rooke, Mr. Wren, Mr. Hill. And after the lecture was ended they did, according to the usual manner, withdrawe for mutual converse. When, amongst other matters that were discoursed of, something was offered about a designe of founding a College for the promoting of Physico-Mathematical Experimentall Learning; and because they had these frequent occasions of meeting with one another, it was proposed that

some course might be thought of to improve their meeting to a more regular way of debating things, and, according to the manner in other countries, where there were voluntary associations of men in academies for the advancement of various parts of learning, soe they might do something answerable here for the promoting of experimentall philosophy. In order to which it was agreed that this company would continue their weekly meetings on Wednesday, at 3 o'clock, of the term time, at Mr. Rooke's chamber at Gresham College; in the vacation at Mr. Ball's chamber in the Temple.'¹

They then proceeded to draw up a list of persons 'willing and fit to join,' fixed a subscription, and appointed officers.

On December 19, 1659, it is entered in the Journal Books that Dr. Petty and Mr. Wren were 'desired to consider the philosophy of shipping, and bring in their thoughts to the company about it;' on January 2, 1660, that Dr. Petty was 'desired to bring in diagrams of what he discoursed to the company this day; and likewise the history of the building of ships;' on January 23, that Dr. Petty was asked 'to deliver in his thoughts concerning the trade of clothing,' which he accordingly did in a paper read on November 26, 1661.²

Besides reading papers, Dr. Petty, though not one of the officers, was on several occasions appointed his deputy by the President, Lord Brouncker; and he was specially entrusted, on at least one occasion, with the unwelcome duty of collecting the subscriptions, which appear too often to have been in arrear.

The King affected the company of scientific men, and was well pleased to appear as the patron of their learned inquiries. He professed a particular interest in medical chemistry and the art of navigation:³ the special subjects of Dr. Petty's own investigations. 'I was since my last with the King,' the Doctor wrote to John Petty; 'he seemed earnest enough to speak with

¹ See Weld, *History of the Royal Society*, i. 65.

Collection,' British Museum.

² This paper is in the MS. volume collected by Dr. Hill in 'The Sloane

³ Burnet's *History of his Own Times*, i. 169.

me. I began with a small prologue ; among other things telling him that I never accepted of any trust out of desire or designe to do him harm ; nor had I ever broken any to do him service. But the King seeming little to mind apologies, as needless, replied : “ But, Doctor, why have you left off your inquiries into the mechanics of shipping ? ” In brief, he held me half an hour before the forty Lords, upon the philosophy of shipping, loadstones, guns, &c., feathering of arrows, vegetation of plants, the history of trades, &c., about all of which I discoursed *intrépide* and I hope not contemptibly. In fine we parted faire, and not without clear signes of future good acceptances. Since I began this letter, the Marquis of Ormonde met me and told me he had express orders to bring me to the King, saying that the King’s head and mine lay directly one way.’⁴

It is possible that Dr. Petty had made the acquaintance of the Marquis, now Duke of Ormonde, when with Hobbes in Paris. The wish he shared with Vincent Gookin, to protect the ‘ ancient Protestants,’ had made him do what he could to protect the Duke’s interest in Ireland during the Commonwealth,⁵ and he was probably able to do so in connection with the claims of the Countess of Ormonde, who succeeded in continuing possessed of her own property though that of the Duke had been confiscated.⁶ ‘ I have a little interest in my Lord of Ormonde,’ Dr. Petty wrote to John Petty, ‘ inasmuch as he was pleased voluntarily to say that he had espoused me for his friend, and would make me the King’s servant, &c.’⁷ ‘ I am making a projection for the King,’ he writes a few days after, ‘ and am of the famous Club of all the Vertuosi, and am operative amongst them : and thus by little and little my life will crumble away.’⁸

Aubrey describes the King ‘ as mightily pleased with his discourse.’⁹ ‘ I think,’ Dr. Petty himself writes after the King

⁴ February 5, 1660.

⁵ Sir W. Petty to Southwell, 1663. See ch. v. p. 140.

⁶ The Marquis of Ormonde was the only Protestant of his family by the accident of being made a King’s ward on his father’s death. He was brought

up in the family of Doctor Abbot, Archbishop of Canterbury. See Pendergast, p. 125.

⁷ August 8, 1660.

⁸ January 22, 1660.

⁹ *Bodleian Letters*, ii. 485.

had accorded him a second interview, ‘that *super totam materiam* I am in a state of grace, to say no more. I am afraid I shall not be able to lay aside that natural severity and regularity with which I am too much troubled to live in these times, but I will endeavour at it. . . . I hear knights swarm. I know not what to do with myself. I think I could be a knight also.’¹

Dr. Petty, however, notwithstanding the marks of royal favour which he had received, found his interests gravely jeopardised by the new turn of events. It was one thing to be able to satisfy the fancies of the easy-going King and to win the goodwill of the Duke of Ormonde: it was quite another to deal with the exasperated enmities of the champions of the Church and State in Parliament, who, more royalist than the King, more zealous for the Book of Common Prayer than the Primate or the Chancellor, regarded the adherents of the deceased Protector, the Commonwealth men and the Anabaptists, as all equally objectionable, and drew no subtle distinctions.

Immediately before the Restoration Dr. Petty had received a promise of favourable treatment in a royal letter of January 2, 1660; but the King was now finding great difficulty in maintaining his promises, when they happened to clash with the views of the party now in the ascendant.² After the complete victory of the Church and Cavaliers at the election of 1661, a general onslaught both on the old Republican party and the adherents of the Protector, and even on the Presbyterians, had begun. The dead bodies of Cromwell, Ireton, and Bradshaw, had just been dragged from their graves in the Abbey and hung at Tyburn, and the question was whether the easy-going King would be able to protect the property of anybody who had been connected with the late Protector.

The position of Dr. Petty was peculiar. He belonged to neither of the two great parties which had made the Restora-

¹ To John Petty, February 19, 1660.

² 14, 15 Charles II. ch. ii. s. 44,

where the above letter is quoted and the declaration of November 30 is recited. (Irish Statutes.)

tion; he was not a Cavalier, he was not a Presbyterian. Neither on the one hand was he a 'soldier,' nor was he an 'adventurer;' but he held Irish land on a title practically founded upon theirs. A weaker man would only have seen the risk of losing all, and might have welcomed a compromise. With characteristic boldness, and undeterred by the tumult around him, Sir William determined to contend for what he held; and also to claim to be paid in full for the debt which he considered was still due to him for the work performed in connection with the distribution of the adventurers' lands. He saw that he was being attacked from the most opposite quarters. 'They say,' he writes to his cousin John, 'that I must be sequestered in Ireland as an *Anabaptist*; so that sometimes I must be of no religion and sometimes of all successively: viz. of that which *pro tempore* is esteemed worst.'³ Under the circumstances, to fight was the best course open, and on January 28, 1661, he memorialised the Privy Council for the payment of his still outstanding claims for the survey and distribution of the adventurers' lands.

The party which, with a firm hold on the House of Commons, continued from this date, with the briefest of intervals, to dominate the administration of the country till the Revolution, was Protestant against the Church of Rome, and Catholic against the Puritans. It was far less liberal than the King himself; and the broad latitudinarian views of Sir William Petty, if distasteful to the theologians of the Sankey type, were equally so to the upholders of a system of government based on the narrow orthodoxy of the Caroline divines in spiritual affairs and the doctrines of Clarendon in matters of State. At this moment a discovery was made which it was hoped by them might at once have deprived Sir William of the royal favour. In consequence of having been the friend and secretary of Henry Cromwell, Dr. Petty had become a trustee in some of the family arrangements of the Cromwell family, and held a power of attorney to act for Henry Cromwell and his wife. 'The Lord Henry Cromwell,' he had said in his reply to Sir Hierome Sankey,

³ March 27, 1660.

‘ was so careful of me, as that no clamour, whisper, or other trinckling, in eight months time of my absence could induce him to sacrifice me to secret rage and malice. In gratitude and acknowledgment whereof, who hath adhered to him more closely than I have done ? ’ ⁴ In these sentiments the Restoration made no difference. There were indeed persons base enough to advise Sir William to disown his obligations to the fallen family, but he firmly declined, and determined to exert himself to save what he could out of the wreck to which the property of the Protector’s family was exposed. He now had the gratification of being told, both by the King and the Chancellor, that instead of viewing his conduct with disapproval, they esteemed him the more for it. ⁵

Sir William’s knowledge of shipbuilding had obtained for him the good-will of the Duke of York as well as that of the King. The Duke was Lord High Admiral and ‘ a most navarchal prince,’ in Sir William’s opinion. The two royal brothers now received with no unfriendly ear a suggestion that the little Club which met at Gresham College should be given a permanent constitution. With this object a charter of incorporation passed the great seal on July 15, 1662. Amongst the names of the original members is that of Dr. Petty, and he was knighted on the occasion. ‘ I have the sword,’ he tells John Petty, ‘ wherewith ’twas done. My Lord Chancellor the same day expressed great kindness to me as having these many years heard of me. The Duke of Ormonde tells me that these are but the beginning of what is intended.’ ⁶ Sir William’s two right-hand men soon after received appointments. John Petty was made Surveyor-General of Ireland, nominally as Sir William’s deputy, with Thomas Taylor as his deputy and principal assistant. ‘ Meddle with no debentures,’ Sir William wrote to him, ‘ and stop your ears when the Sirens sing.’ ⁷

It was at this time that Sir William first became acquainted

⁴ *Reflections*, p. 134.

⁵ *Life of Lord Shelburne*, i. 4.

⁶ To John Petty, 1662.

⁷ *Ibid.* October 4, 1662. Hobbes,

owing to the ill-feeling which existed between Dr. Wallis and him, was not among the original members of the Royal Society.

Spragge, to fix an engine with propelling power in a ship, and with devising a new rigging.¹ But the subject which claimed his special devotion was naval architecture, and more particularly the construction of a sluice-boat, or 'double bottomed ship,' for the easier navigation of the Irish Channel.

On November 27, 1665, after communicating to the Royal Society a paper on the 'History of Clothing,' Sir William read his general views on the subject of 'Shipping.' His mature opinions were finally set out in a 'Treatise or Discourse about the Building of Shippes, presented in MS. to the Royal Society;' which 'William, Lord Brouncker, President of the Council pertaining to that Society, took away,' says Aubrey, 'and kept in his possession till 1682, after saying it was too great an arcanum of State to be commonly perused.'²

The 'sluice-boat,' or 'double bottom,' to quote the names by which the experiment is described, was, correctly speaking, a ship with two keels joined together by transverse connections, and resembled the vessel known as the 'Calais-Douvres,' which in recent years was successfully used for the improved navigation of the English Channel, until superseded by still more perfect designs. On November 12 and November 19, 1662, Sir William addressed two communications to the Royal Society, concerning 'a double bottomed cylyndrical vessel;' and Captain Graunt was desired to inform the Doctor that 'the society was well pleased with the idea, and that the members of the society in Ireland be appointed a committee on the matter.'³ Evelyn says of this invention: 'The vessel was flat-bottomed; of exceeding use to put into shallow parts, and ride over small depths of water. It consisted of two distinct keeles, crampt together with huge timbers; so as a violent stream ran between them. It bore a monstrous broad saile.'⁴

¹ See notes to the chapter, p. 122.

² *Bodleian Letters*, ii. 490. Anthony Wood questions whether this may not be the work published in 1691, after Sir William's death, under the title of *A Treatise of Naval Philo-*

sophy. See, too, *Evelyn's Memoirs*, i. 358.

³ *Journals of the Royal Society*, 1662, British Museum.

⁴ *Evelyn's Memoirs*, i. 378, 387, ii. 95, 96.

The first trials were disappointing, but Sir William was not to be beaten : and having made a few alterations he again started 'The Experiment,' as the ship was called, on a trial sail. 'It is,' says Pepys, 'about thirty ton in burden, and carries thirty men with good accommodation (as much more as any ship of her burden), and so as any vessel of this figure shall carry more men with better accommodation by half than any other ship. This also carries ten guns of five tons weight.'⁵

The Committee of the Royal Society, consisting of Lord Massereene, Sir Peter Pett, Sir A. Morgan and others, 'could not think of a better expedient to call together all such who were conversant with boats and the water, than on a holy-day to propose a match, and to make a free offering of a flag of silk charged with a gilded harp and a wreath of laurel above, and a scroll beneath with this inscription, "Præmium Regalis Societatis Velociori," and this to be given to any boat that should outsail Sir William Petty's vessel, in such a course as should be set. The contest, in which three prime boats with the best sailors of the harbour of Dublin entered, ended in the triumph of Sir William's vessel, whose crew 'took down the premium and bore it at the main-top as "Admiral of the Cylanders."'

The fame of the double-bottomed vessel now was great, and was still further increased on her winning a wager of fifty pounds in a sailing match between Dublin and Holyhead with the packet-boat ; 'the best ship or vessel the King had there,' according to Pepys.⁶ In coming back from Holyhead they started together. Sir William's vessel arrived first, at five at night ; the packet not till eight next morning ; the crew not thinking that the other could have lived in such a sea.' The success which attended these trips naturally made Sir William anxious that

⁵ *Pepys's Diary*, iii. 233. See, too, Birch, *History of the Royal Society*, i. 124, 131, 141, 183.

⁶ Pepys, iii. 233. In the Pepysian Library at Magdalene College, Cambridge, and in the MS. volume at the British Museum, in the Sloane Collec-

tion, containing the Register Book of the Royal Society, vol. i., a picture of the vessel is to be found. See, too, the MS. minutes of the Royal Society of Dublin, i. 3, now at the British Museum, and Birch, *History of the Royal Society*, i. 183 *et seq.*

his invention should be known in England, and brought to the notice of the King. In the attempt to obtain Royal patronage for his undertaking, it is not unlikely that he was aided by the interest of Pepys, who filled an important post at the Navy Board, and had easy access to the Duke of York. In October 1663, a vessel built on the new model was despatched from Dublin. Sir William gave his crew and their families an entertainment on the night of embarkation, to encourage them.

‘Having sent their wives and children in Ringsend coaches, he provided them a banquet of burnt wines and stewed prunes, apple pyes, gingerbread, white sopps and milke, with apples and nutts in abundance; and all this besides meat, tongues, and other more solid food for the men themselves; and soon, after much crying and laughing and hoping and fearing, he got them all to part very quietly one from another, intimating to the women that if they succeeded, there was a fleet to be built of double bottomed vessels, whereof every one of their husbands would be a captain; and in time it was not unlikely that they themselves would be ladies; unto which they simperingly said, wiping their eyes, that more unlikely things had come to pass. Two of the crew, none of the worst, are volunteers. The substance of the speech which Sir William made to them was: “That he himself was no seaman, nor could tell what other vessell they might encounter with at Dublin, were able to doe: but the intention was to send them with a vessel to His Majesty, which though full of ugly faults and eyesores, being built for a fresh-water Lough and to be carried eight miles on land, was to outsayle any other vessel whatever; and to endure all the hazards of the troublesome passage from hence to London. Wherefore, he advised them, if they did not believe he should answer these ends, they should not venture their lives to make them and him ridiculous; for, said he, the seamen and carpenters will have noe mercy upon you; nor will the Court, with the Port, spare you; the players will make scenes of your double bodies, the citizens will make pageants of your vessel upon my Lord Mayor’s day; but the comfort is that the King will be your judge.” ’⁷

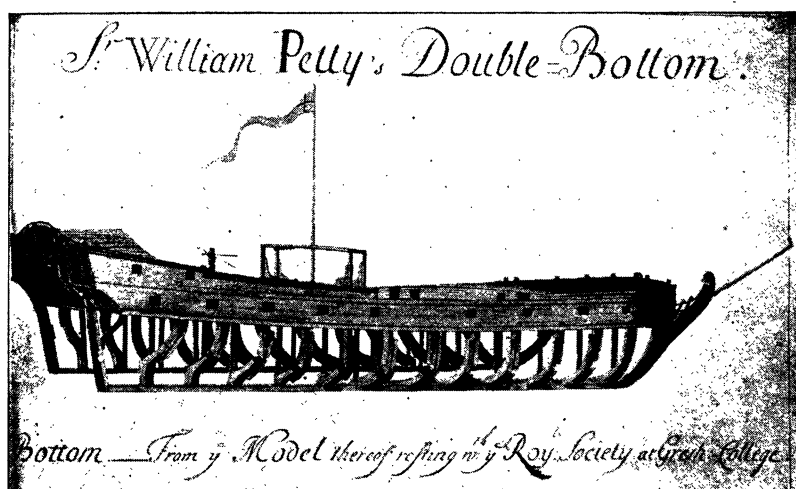
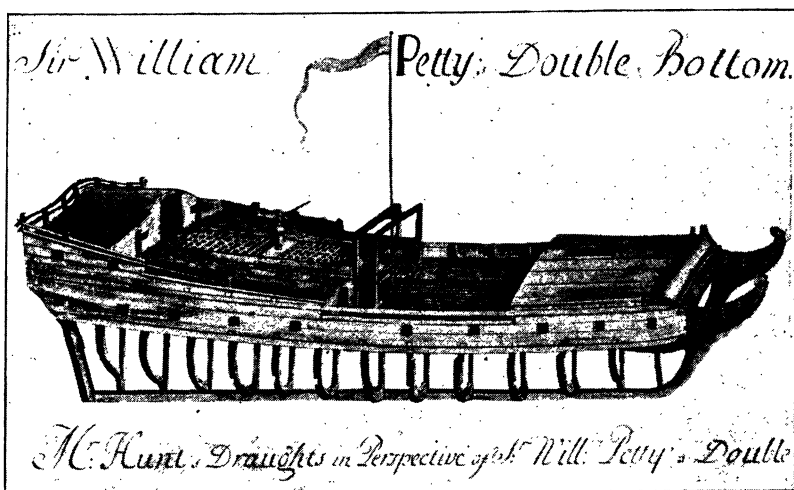
⁷ Register Book of the Royal Society, and Petty MSS.

Lord Massereene endeavoured to hinder the sailing of the vessel for England. He had originally advanced money towards her construction, when she was intended for his Lough, and a long dispute began between Sir William and him as to the property in her. Sir William, however, ended by making good his claim to the ownership. The vessel accordingly started for England, and crossing the Channel arrived without mishap. Sir William soon succeeded in interesting the King in the experiment. Pepys gives an account of what followed. On February 1, 1664, he writes in his diary :—

‘In the Duke’s chamber : the King came and stayed an hour or two, laughing at Sir William Petty, who was then about his boat, and at Gresham College in general ; at which poor Petty was I perceived at some loss ; but did argue discreetly, and from the unreasonable follies of the King’s objections and other bystanders, with great discretion ; and offered to take odds against the King’s best boates ; but the King would not lay, but cried him down with words only. Gresham College he mightily laughed at for spending time in weighing of such things, and doing nothing else since they sat. He told him he would have to return to Ireland in his own ship, which he called a fantastical, bottomless, double bottomed machine.’⁸ His Majesty, however, was ultimately persuaded, having had his joke at the expense of the philosophers, to allow the sun of his royal countenance to shine on the project ; for Evelyn records that on December 22, 1664, at the launching of a ship of two bottoms, invented by Sir William Petty, the King being present, gave it the name of ‘The Experiment.’⁹ Shortly after, the prospering fortunes of the new vessel, which appears to have been one of those built on Sir William’s plans, were being celebrated in orthodox fashion by a dinner. ‘At noon, February 18, 1665,’ says Pepys, ‘at the Royal Oak Farm in Lombard Street ; where Sir William Petty and the owners of the double-bottomed boat, the “Experiment,” did entertain my Lord Brouncker, Sir Robert Murray, myself, and others, with marrow bones and a chine of beef, of the victuals they

⁸ *Pepys’s Diary*, iv. 28.

⁹ *Evelyn’s Memoirs*, i. 387.



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have made for this ship; and excellent company and a good discourse; but above all, I do value Sir William Petty.' The pleasant prospect was, however, soon to be overclouded, and dire disaster was impending, for in the following year the ship perished in the Irish Channel, in a great storm, which, in the words of Anthony Wood, 'overwhelmed a great fleet the same night; so that the ancient fabric of ships had no reason to triumph upon that new model, when, of seventy sail that were in the same storm, there was not one escaped to bring the news.'¹

Notwithstanding this disaster, Sir William still continued to believe in the correctness of the principles on which the vessel was constructed, and only awaited a favourable opportunity to apply them again in practice. 'Honoured friends,' he wrote in a circular to the subscribers for the ship, 'I wish I were able to repair what all of our friends have suffered. . . . 'Tis my unhappiness to believe that this designe will not dye, and therefore I should be glad to receive somewhat for a fourth adventure, which I can with the same confidence as upon the third proceeding. I am not much discouraged, and am less ashamed at anything that has happened. I have willingly deceived nobody, nor have I been much deceived myself. The greatest do not always hitt their marks. This adversitie will try and steady the resolution.'²

The controversy which raged around the double-bottomed ship kept Sir William in London and the neighbourhood. Evelyn relates how about this time he was at the Durdans, in Surrey, where he found Sir William and Dr. Wilkins and Mr Hooke, 'contriving chariots, new rigging for ships, and a wheele for one to run races in,'³ and other mechanical inventions,' and perhaps, he says, 'three such persons together were not to be found elsewhere in Europe for facts and learn-

¹ *Pepys's Diary*, iv. 356. Wood, *Athenæ Oxonienses*, iv. 215, 216. Evelyn makes the ship perish in the Bay of Biscay.

² June 16, 1666, Petty MSS. Also 'H. M. to Henry Muddelman,' September 16, 1663; 'J.C. to Williamson,' January 4, 1664, in the Calendar State

Papers, Domestic Series, lxxx. 274, 437.

³ Apparently an early idea of the velocipede or cycle. In the church of Stoke Poges, near Slough, on an ancient window of the date of 1642, a figure may be seen riding a rude wheel. See the *Wayfarer*, February 1888, pp. 12-14.

ing.’⁴ Sir William’s name also frequently occurs amongst those present at the gatherings—so faithfully recorded by Pepys—at the coffee-house, where the leaders in science, literature, and politics, used to assemble and discuss the topics of the day. The celebrated Diary depicts him the centre of a brilliant group, kept constantly alive by his discourse, enriched as it was by a varied experience of life, and seasoned by the flavour of paradox and the satirical gifts which, in the practical affairs of life, had already been the cause of trouble to him, and were to be so again; but in these meetings struck no rankling wound, where they only played round the genial souls of Pepys and his chosen friends, instead of hurtling down in an iron hail on the obnoxious head of Sir Hierome Sankey and his Anabaptist allies.

‘*January 11, 1664.*—To the coffee-house, whither came Sir William Petty and Captain Graunt, and we fell to talke of musique, the universal character, art of memory, prayers, counterfeiting of hands, and other most excellent discourses to my great content, having not been in so good a company a great while.’⁵

‘*January 27, 1664.*—At the coffee-house, where I sat with Sir S. Ascue and Sir William Petty, who in discourse is methinks one of the most rational men that ever I heard speak with a tongue, having all his notions the most distinct and clear, and among other things saying that in all his life these three books were the most esteemed and generally cried up for within the world: “*Religio Medici*,” “*Osborne’s Advice to a Son*,” and “*Hudibras* ;” did say that in these—in the two first principally—the wit lies; and confirming some pretty sayings—which are generally like paradoxes—by some argument smartly and pleasantly urged, which takes with people who do not trouble themselves to examine the force of an argument which pleases them in the delivery, upon a subject which they like—whereas by many particular instances of mine, and others out of “*Osborne*,” he did really find fault and weaken the strength

⁴ *Evelyn’s Memoirs*, ii. 244.

⁵ *Pepys’s Diary*, iv. 11.

of many of Osborne's arguments; so as that in downright disputation they would not bear weight; at least, so far, but that they might be weakened and better found in their rooms to confirm what is there said. He showed finely whence it happens that good writers are not admired by the present age; because there are but few in every age that do mind anything that is abstruse and curious; and so longer before anybody, do put the true praise, and set it on foot in the world: the generality of mankind pleasing themselves in the easy delights of the world: as eating, drinking, dancing, hunting, fencing, which we all see the meanest men do the best; those that profess it. A gentleman never dances so well as the dancing master, and an ordinary fiddler makes better musique for a shilling than a gentleman will do after spending forty, and so in all the delights of the world almost.⁶

'*April 2nd, 1664.*—At noon to the Coffee House, where excellent discourse with Sir William Petty, who proposed it as a thing truly questionable, whether there really be any difference between waking and dreaming; that it is hard not only to tell how we know when we do a thing really or in a dream; but also to know what the difference is between one and the other.'⁷

'*22nd March, 1665.*—With Creed to the Change, and to my house; but it being washing day, took him, (I being invited) to Mr. Houblons, the merchant, where Sir William Petty and abundance of most ingenious men: owners and freighters of the "Experiment," now going with her two bodies to sea. Most excellent discourse. Among others, Sir William Petty did tell me that, in good earnest, he hath in his Will left such parts of his estate to him that could invent such and such things; as, among others, that could truly discover the way of milk coming into the breasts of a woman; and he that could invent proper characters to express to another the mixture of relishes and tastes. And says, that to him that invents gold, he gives nothing for the philosophers' stone; for, says he, they that find out that, will be able to pay themselves. But, says he, by this means it is better than to give

⁶ *Pepys's Diary*, iv. 23, 24.

⁷ *Ibid.* iv. 96.

a lecture; for here my executors, that must part with this, will be sure to be well convinced of the invention before they do part with their money.' ⁸

Sir William, devoted as he no doubt mainly was to science, and especially to mechanical science, would, however, have been no true child of the seventeenth century, if he had not also dabbled in theology, and he unfortunately regarded it as one of his strong points. His studies frequently wandered off into the realm of metaphysical inquiry, and the transition thence to the realm of religious speculation was easy.⁹ To think, meant with him as a rule to write also, on whatever subject happened to be occupying his mind at the moment; and theology had a fatal attraction for his pen. He was for a long time engaged on a treatise, entitled 'The Scale of Creatures.' 'The discourse,' he tells Sir Robert Southwell, 'was not vulgar, nor easy to be answered by the libertine scepticks; of whom the proudest cannot be certain but that there are powers above him, which can destroy him, as they do with the viler animals. 'Tis hard to say where this scale ends, either upwards or downwards, but it is certain that the proud coxcomb man is not the top of it: wherefore let us be sober and modest, and conforme to the general practise of good men, and the laws of our age and countrey, and carefully study the laws of nature, which are the laws of God.' ¹ . . .

The object of his work is alluded to more fully in another letter to Sir Robert:—

'I am glad,' he says, 'Lord Chief Justice Hayle hath undertaken the work you mention [on the Origination of Mankind], but Galen, *De Usu Partium*, will not do it: 1. the point is to prove that the mcst admired piece in the world, which Galen takes to bee man, was made by designe and pre-conceived idea, which his Maker had of him before his production. 2. What shall we say to the flaws and many infirmities in ye said piece, *man*; and ye difficulty of helping either your soare

⁸ *Pepys's Diary*, iv. 378.

⁹ Amongst the Longleat MSS., the copy of a letter exists from Sir William to Lord Anglesea (April 22, 1675) full of speculations on the nature

of the Deity, the end and object of creation, &c.; also a sort of catechism (in Latin) on the fundamental truths of religion.

¹ October 30, 1676.

throat or your father's dropsy? 3. The question is whether man was designed to performe the things which he performeth, or whether he performeth by the same necessity of his fabrick and constitution, wherewith fire burneth. My medium or organ of the "Scale of Creatures" doth not wholly remove these difficulties; but it doth sufficiently humble Man, and check the insolent scepticisms, which do now pester the world; and is a good caution against the slighting religion and the practise of good men; and as for the other grand point, men take too much pains to prove it; for it is necessary that there should be a First and Universale Cause of all things, by whose designe and according to whose idea all other things must be made, and we may feele the blessings of the incomprehensible Being, altho' we do not see it; as blind men may be comforted by the warmth of the fire. *Abyssus abyssum invocat.* Wherefore let us returne to wish well unto and do well for one another. I hope when our case of clay is broaken by Naturale Death, wee shall no longer peep thro' its creaks and cranyes, but then looke round about us freely, and see clearly the things which wee now do but grope after. . . . ' ²

But Sir William had not got far in this *opus magnum* before he began to realise that his theology might raise up even more enemies against him than his transactions in Irish land, although the Court of High Commission no longer existed and the Inquisition had no jurisdiction in England. 'The "Scale of Creatures" goes on,' he tells Southwell, 'but will produce only more mischief against mee. There will be many things in it the world cannot bear, and for which I shall suffer. But suppose all were transcendently well, what shall I get by it but more envy?' ³ So reflection after a time brought discretion, and 'The Scale,' even if completed, was never published. The only relic of it is a syllabus of what 'The Scale' was intended to contain. The work itself is not extant.

² November 14, 1676.

³ To Southwell, August 4, September 29, 1677. In the Bodleian Library there is a long letter to the

Earl of Anglesea 'justifying his method of explaining the attributes of God,' April 3, 1675. (Rawlinson MSS.)

The mental opposition which existed between Sir William and the extreme Calvinists has already been noticed. Of him it might have been said, as of Algernon Sidney, that 'he seemed to be a Christian, but in a particular form of his own. He thought it was to be like a divine philosophy in the mind.'⁴ Such views were as odious to the Church of Rome as to the Church of Geneva, and for the whole ecclesiastical system of Rome, Sir William, as a follower of Hobbes, had a rooted aversion, which recent events had tended to strengthen. He had seen that the true origin of the troubles in Ireland lay in the constant attempts of the Church of Rome to use the leaders of the Irish people as the instruments of their own designs; and he was of opinion that the cause of all the civil strife, not in Ireland only but in Europe, for more than a century, had been the aggressions of that Church on the power of the State, and the religious persecutions on account of opinion with which it had devastated Southern Europe like a pestilence, 'punishing believers heterodox from the authorized way, in public and open places, before great multitudes of ignorant people with loss of life, liberty, and limbs.'⁵ Recent events had tended to accentuate these feelings. At the very time when he was in London negotiating with Thurloe, in 1658, the latter had received a despatch from Maynard, the English Consul at Oporto, with an account of the death by burning as heretics—of which Maynard had been an ocular witness—of a motley band of unsound theologians, Jews, and English sailors, who had been seized on different pretexts by the officers of the Inquisition and sentenced to be executed at a 'Grand assize' held there.⁶ George Penn also, brother of his friend Admiral Penn, had died just after the Restoration under circumstances

⁴ Burnet, *History of his Own Times*, vol. ii. p. 351.

⁵ *Treatise on Taxes*, ch. ii. p. 6.

⁶ It is curious that in this letter Maynard states, with reference to several other persons who were burnt at the same time, that—just as in the case of George Penn mentioned below

—the desire of the Church to get possession of their wealth was the true cause of their indictment. 'They were all of them people of great estate, which is supposed was the greatest crime for which they dyed.' Thurloe, vii. 567.

which had strongly moved public indignation. Early in life George Penn had married a Roman Catholic lady in Antwerp, and subsequently settled in Spain, as a merchant, at Seville and Malaga. He carefully avoided all cause of religious offence, but his property was too tempting a bait. He was suddenly seized in 1643 in his house by the familiars of the Holy Office, and dragged away: his marriage was declared void; his wife was carried off, and forcibly married to a Roman Catholic; he was himself plunged into a dungeon and called upon to recant his religion and confess unheard-of crimes. On his refusal he was almost tortured to death. At length mind and body gave way, and he promised to sign all that was dictated to him. On these conditions his life was spared as a signal instance of the mercy of the Church. But his property was confiscated and handed over to ecclesiastical uses. Then he was dragged to the Cathedral of Seville in order publicly to recant his errors, and be a central figure in one of those ghastly scenes in which the gloomy and cruel character of the Spanish people rejoiced as 'acts of faith' specially agreeable to God. But on leaving the Cathedral he was again seized, and plunged into a debtors' prison. Fortunately for himself, broken and disfigured as he was, he had been recognised by some English residents who had been attracted to the Cathedral. They communicated with the English Government. Still more fortunately, Admiral Penn was at this moment on his station in the Channel (1647), and happened to seize a ship suspected of communicating with the rebel forces in the South of Ireland. On board this ship was a Spanish noble, Juan da Urbino, on his way to Flanders. The rough Admiral stripped him naked, and treated him with every indignity, announcing his intention to keep him in his hold till his brother was released. The slow pulse of the Spanish Ministry of Foreign Affairs was now probably quickened, and George Penn was released and sent to England. Reparation was demanded, but as war soon after broke out, the claim remained in abeyance. At the Restoration Charles appointed George Penn Envoy to the Court of Spain, as a striking means of reinstating him in public opinion after the gross indignities of which he had been

the object.⁷ But he was physically a ruined man. The rack and the lash, the loss of wife, home, and property, had done their work; and he died in England leaving an uncertain pecuniary claim against the Spanish Government to his family.

In the world of theology a furious bigotry still held an almost undisputed sway. The idea that the choice lay not necessarily between blank negation on the one hand and either Puritanism or the Church on the other, that science and religion had relations, that there was a possible connection between the religions and philosophies of the ancient world and Christianity, and that Christianity itself must have existed before the New Testament had been written, were ideas which it was barely possible to hold anywhere, without danger to the property and person of those who asserted them. Such ideas also had no hold on the popular mind, which delighted in definite dogma. The hope indeed of the scientific men and philosophers of the seventeenth century, especially of the school of Cambridge Platonists, which Sir William's old Oxford ally, Dr. Wilkins, had joined, was that the future of religion lay with a rational and unsectarian form of Christianity; and many of the founders of the Royal Society looked forward to establishing religion on a basis of evidence and reason. But these views, though boasting distinguished adherents in England, amongst the masses made no converts, and were equally distasteful to the Protestant and the Romanist theologians. Those who held them were denounced as Socinians, and it is conceivable that, under less favourable circumstances, the fate of Dr. Petty might have been that of his brother-physician, Michael Servetus, who only escaped from the clutches of the Roman Catholic authorities of Vienne to fall into those of Calvin and be burnt at Geneva. 'Being a votary,' he acknowledges, 'neither to any one particular sect or superstition (as a member of Christ's universal Church) nor to any one faith or party, as obedient to my present visible governors, (it being alleged against me that I had termed

⁷ See the original documents bearing on this case, printed in Granville

Penn's *Life of Admiral Penn* (appendix to vol. i.).

such who were otherwise, to be as worms and maggots in the guts of the Commonwealth) I was counted as an enemy even to all the Sects and Factions.’⁸

NOTES TO CHAPTER IV

I

Concerning ye Plagues of London

1. London within ye bills hath 696th people in 108th houses.
2. In pestilentiall yeares, (which are one in 20), there dye $\frac{1}{6}$ th of ye people of ye plague and $\frac{1}{5}$ th of all diseases.
3. The remedies against spreading of ye plague are shutting up suspected houses and pest-houses within $\frac{1}{2}$ a mile of ye citty.
4. In a circle about ye center of London of 35 miles semi-diameter, or a dayes journey, there live as many people and are as many houses as in London.
5. Six heads may bee caryd a days journey for 20^{sh}.
6. A family may bee lodged 3 months in ye country for 4^{sh}, so as ye charge of carying out and lodging a family at a medium will be 5^{sh}.
7. In ye greatest plague wee feare, scarce 20th families will bee infected; and in this new method but 10th, ye charge whereof will bee 50th pounds.
8. The People which ye next plague of London will sweep away will be probably 120th, which at 7[£] per head is a losse of 8,400^{ths}, the haif whereof is 4,200^{ths}.
9. So as 50 is ventured to save 4,200, or about one for 84.
10. There was never a Plague in ye campagne of England by which $\frac{1}{6}$ th of ye people dyed.
11. Poore people who live close dye most of ye plague.
12. The Plague is about 3 monthes rising and as much falling, which cold weather hastens.
13. Killing dogs, making great fires in ye street, nor the use of medicaments are considered sure, for which everyone by common directions may bee theire owne Physicians.
14. In ye circle of 70 miles diameter, choose 10 large wide roomey disjoyned houses with water and garden to each, the Inhabitants to remove at 7 dayes notice.
15. Convenient wagons or coaches to bee prepared to carry away ye suspected.

⁸ *Reflections*, p. 119.

16. A method to furnish ye pesthouses with medicines for their money.

17. Bookes of devotion for every house.

Proposalls.—When 100 per week dy, the Plague is begun. If there dye fewer than 120ths, out of ye bills, of all diseases within a yeare after, then W. P. is [to] have 20^{sh} per head for all lesse and to pay 10^{sh} per head for all above it.

Every family removed being to provide 10£ for ye charge of going and coming, and of 4 monthes rent. Or a gratuity of — with W. P. his insurance.⁹

II

‘An Attempt to demonstrate that an Engine may be fix’d in a good Ship of 5 or 600 Tonn to give her fresh way at Sea in a Calm.’

In May 1673, Sir Edward Spragge caus’d the Experiment to be made in a Dogger of about 80 Tonn, and found it effectually to answer his purpose. He intended to have promoted it, so as to have it fix’d in some Frigatts against the next Summer; but his Death put a stop to the undertaking, and tho’ great endeavors have been used to set it on foot divers times since, it has not yet met with any encouragement.

The Description.—1. The Engine is to consist of an Axis or Shaft of about 35 foot in length, or more or less in proportion to the breadth of the ship, for it must extend itself without board, about 3 foot on each side.

2. This Axis is to be placed in a Frigate, lofty, betwixt Decks and to ly athwart ship, even with the upper deck, or perhaps rising an inch or two, that it may not ly lower betwixt Decks then the Beams of the Ship. Upon the middle of the Axis shall be placed a substantial Trundle head.

3. On each end of the Axis, without-side the ship, is to be fix’d a wheele of about 7 foot diameter, with 12 Stemms issuing out of each wheele, and a Paddle or Oar at the end of each Stem of 3 feet square upon the flat; the Stemms to be of such a length that those Paddles which hang perpendicular may be quite dipt in the water to the Stem.

4. To make this Axis and the Paddle wheels turn round, so as the Paddles may take hold of the water in the nature of Oars one after another successively.

⁹ *Of Lessening ye Plagues of London*, October 7, 1667.

There is to be a capstern standing upright betwixt Decks, just in that part of the Ship where the jeer capstern is usually placed. Upon this capstern shall be fix'd a cog-wheele, with the Coggs standing upwards to take hold of the aforesaid Trundlehead.

5. The wheele in which the Coggs are placed, shall have 15 holes, to put so many half barrs in upon occasion as the manner is in Drum Capsterns. ~

These barrs may be in length about 13 foot from the center of the capstern, if the ship have bredth enough, as I think all ships have, that have 6 foot height betwixt Decks; and then three men may well be placed to every bar.

6. Upon the wast or upper Deck, must be another capstern and crown wheele, with the Coggs turn'd downwards to take hold of the upper part of the Trundle head. So the men betwixt decks heaving one way, the men on the upper deck must heave the other way, to give the Axis and Paddle wheels motion; the like number of Barrs shall be upon ye upper Deck; and ye like number of men: 3 men at each half barr to the 32 half barrs, 96 men in all. And if need should be on any extraordinary occasion, the Barrs may be swifted with a rope running from the end of one Bar to ye end of the other quite round, and one man may heave upon the swifting between ye ends of every Barr; 16 betwixt decks and 16 upon Deck; which added to the 96 makes 128 men.

7. The Paddles and Stemms without side the ship, and the capstern barrs within shall be so ordered, that they may be put in, or taken out in a quarter of an hours time, as occasion shall require. So nothing will remain standing within but the capsterns and Crown wheels, which will take up so little room, as to hinder nothing in the ship, and without will onely remain ye 2 ends of the Axis, with the 7 foot wheel upon each, which may always be kept covered by Tarpaulins made for that purpose.

While the Engine is working, it will hinder the use of 3 or 4 Gunns on each side the ship; but when the paddles and capstern barrs are stow'd, it will neither hinder the use of one Gunn, nor anything else in the ship.

But the best way to evince this point is to have a perfect modell of the Engine, fix'd within a good modell of a fourth-rate Frigat.

Since the first Invention and the said Experiment was made, another use was found out for the Engine, than that for which it first was design'd. And the same being fix'd on two Boats, covered over with a house about 6 foot high and 20 foot square, has bin employed for the Towing of Ships, first wrought with men, and since with horses, over the Barr at Newcastle, and up and down the

River of Thames, between London and Gravesend, and it was wrought with six horses, worth about 8 or 9^l a horse.

With this Engine has bin towed 4 of his Maj^{ty}s new thirdrate ships, built at Blackwall, from that place to Woolwich, without any masts, vizt. the Kent, Essex, Suffolk, and Exeter.

With the same has bin tow'd down the River from Deptford to severall places divers of his Majestys 5th and 4th rate Frigatts, when the wind obstructed there; having all their masts and Riggings standing and sails furled. Particularly, the St. David, commanded by Sir Richard Munden, quite thro' Gallions reach, against a stiff gale of wind.

The Engine has likewise tow'd merchants ships deep laden drawing 16 foot water, from Blackwall, Gravesend, in one Tyde.

The said third rate ships were of above 1000 Tonn burthen, and each of them were towed in an houre from Blackwall to Woolwich, which is 3 miles, and 2 of them tow'd against the Wind.

All this was perform'd by the strength of 6 horses going round at a capstern in like manner as if it were to heave up an Anchor.

The Demonstration.—Now if wee knew how to place the like Engine within side a ship, and how to apply as much strength to work it as was applyed on board the Tow-boat, then the same strength will give motion to the ship by itself, at least as well as it used to give motion to the Tow boat and the Ship too.

That the Engine may be so placed in a ship is already set forth; and that like force may be applied to it, is to bee proved.

Twelve men are allow'd to heave as much at a capstern as an able horse can draw at ye same; and say the strength of 72 men are equal to that of 6 horses.

But wee can place 96 men at 2 capsterns, and 32 upon the swiftings, in all 128; which is about $\frac{2}{3}$ more strength then the strength of 6 horses.

And therefore since ye strength of 6 horses, or 72 men, did give good steerage way to the Towboat and the St. David, against a brisk gale of wind; the strength of 128 men, applyed in the same manner may give fresh way to the St. David (or other like ship) at Sea in a Calme.

This I conceive to be Demonstration, but humbly submit to better judgments.

W. P.

Endorsed.—An Attempt to demonstrate how an Engine may be placed in Frigatts to give them way in a calm.

November 7, '85.

CHAPTER V

THE ACTS OF SETTLEMENT AND EXPLANATION

1660-1667

Condition of Kerry—Ireland in 1662—The Acts of Settlement and Explanation—Dr. Petty and the Cromwell family—The settlement of Ireland in 1667—Sir James Shaen—Quarrel with the Duke of Ormonde—The Irish Cattle Acts—Effects of Absenteeism—Estimate of the Irish character—Interests of the Irish people—Settlement at Kenmare—Instructions for Kerry.

THE Restoration had necessarily reopened the Irish Land Question, and Sir William had once more to attend to 'his surveys, distributions, and other disobliging trinkets,' as he termed them. He was, however, by this time secure of the royal protection, though a long struggle was yet before him. His stake in Irish property was large, nor was it represented merely by the land he had received in direct payment for his official services on the survey. The long delay which had taken place in the payment of the army had reduced a great number of the soldiers, and even of the officers, to great distress. Land debentures began to pour into the market soon after the passing of the Act of 1653, especially those belonging to the common soldiers; and the process had gone on ever since. These debentures in 1653 were not commanding more than a price of from four shillings to five shillings in the pound, and they were eagerly bought up by the officers from their own men at reduced prices. A regular land market existed, and brokers established a sort of Exchange in Dublin. When the army was satisfied, and the prohibitions of the Act had therefore ceased to be operative, Dr. Petty, as already seen, himself entered the market as a buyer—chiefly from the debenture brokers—and thereby largely increased his own stake in Irish land.

The net sum which, after paying all outgoings, remained to Dr. Petty as the result of his labours was 13,000*l.* For the Army Survey he received 9,000*l.*, and 600*l.* for the survey of the adventurers' land. He had saved 500*l.* before going to Ireland, and laid by 800*l.*—viz. two years' salary of his official post as Clerk of the Council—and 2,100*l.* from his salary as Physician-General and his private practice. For the distribution of the adventurers' land he had not as yet been paid at all. Of the above sums he invested part in debentures at a time when, as he wrote in his will, 'men bought without art, interest, or authority, as much land for 10*s.* in real money as in this year, 1685, yields 10*s.* per annum above His Majesty's quit rents.' With the rest he bought the Earl of Arundel's house and grounds in Lothbury, known as Token-House Yard. That he had bought debentures was one of the charges by which Sir Hierome Sankey, though fully aware that his own conduct had been far more open to criticism in this respect than that of Dr. Petty, attempted to inflame the public mind in England when bringing forward his main accusations as to lands having been wrongfully kept back from the distribution to the army.

The lands which Sir William had acquired were principally in Kerry: the county which the original allottees of Irish land did all in their power to avoid, because of the apparently rough and unprofitable character of the soil and the wildness of the inhabitants. 'When we first came into that country,' says Mr. Lewin Smith, one of the assistant surveyors, 'wee viewed the place in a generall way, considering the lands to be exceedingly bad; and was about not to returne any part of the said countrey profitable, but only arable and good pasture, though our instructions did make mention of severall kinds of pasture, which did include and reach the worst pasture, viz. rocky, fursy, heathy, mountaine, and bog, &c.; but yet it was soe bad, that wee intended to proceed. Butt then comming to the more remote part, viz. Iveragh, Dunkeron, Glanneroughty barronyes, the greatest part of Corkeaguiny barrony, the parishes of Kilcommen, Killagha, &c., and the

west fractions in Magunnity, with much of the mountaine called Sleavelogher, in the barony of Trughanackny, Magunnity, Clanmorris, and Iraghticannor, wee were at a loss ; for the like quantity that wee were about to returne unprofitable in the more habitable places, was even as good as many whole denominations consisted of in the said places, except some small spotts of arable that was in some of them, and yet goeing by the names of plowlands and parishes, &c., some men's whole estates consisting of such like ; some of the said denominations wholly without arable. Soe that wee did not know what to doe, but was very inquisitive of those that had been inhabitants on the said places, and of our bounders ; soe that we did clearly see that something had been made of those places, and something might be made of them againe, if stocked with cattle ; and we did not judge it safe to take uppon us to cast away towne lands, parishes, nay, even allmost barronyes, wholly for unprofitable. Wee could, although we did at first soe judge, having never been in the like places before ; yett having information of the aforesaid, and seeing that the said places were turned in the abstracts, and as plowlands and as parishes, and were some men's whole estates, and that we were informed that the said coarse plowlands formerly paid contribution or taxes with the rest of the countrey, when the same was levied by plowlands, therefore we could not but judge these places good for something, and resolved to make something of them.'¹

Dr. Petty had himself noticed, apart from the possible agricultural value of the land at some future date, the facilities which the geographical situation, the land-locked harbours, the extensive forests, the valuable quarries, and other natural resources of the county might give in the development of other than merely agricultural wealth. He therefore added largely by purchase to the original allotment which he had received in that desolate district in payment of his services on the survey. Aubrey described him, in 1661, as able 'from Mount Mangerton in that county to behold 50,000 acres of his own land,' most of it, indeed, waste and unprofitable, but

¹ *Down Survey*, p. 94.

which he hoped would ultimately be a source of both private profit and national wealth.² These estates were principally on the north and south shore of the Bay of Kenmare, in the baronies of Iveragh and Dunkerron, and lay in a district famous from the earliest times for the interminable feuds of the heads of the Irish tribes which inhabited it, conspicuous among whom were the O'Sullivans and the McCartys, whose lands were bounded south and west by the sea, and to the north and east by the territories of the descendants of earlier settlers, the so-called 'degenerate English : ' Fitzmaurices, Sarsfields, Barrys, Roches, and Fitzgeralds, many of whom had fled, but whose head, Patrick, the principal representative of the rebellious houses of the great insurrection of the Earl of Desmond in the reign of Elizabeth, had somehow succeeded in proving constant 'good affection,' and in thus retaining his large territories on the Bay of Tralee, near Listowel and Lixnaw.³

The peace and material improvement which Clarendon noted as having begun in Ireland immediately after the resettlement has already been mentioned. 'Yet in all this quiet,' he goes on to say, 'there were very few persons pleased or contented,' and so stormy was the outlook at the Restoration, and so intricate was the whole situation, that when created Chancellor and practically First Minister of the Crown, 'he made it his humble suit,' as he himself records, 'that no part of it might ever be referred to him.' ⁴

Four parties at the Restoration were eagerly pressing their claims. The first and largest was the English party, the 'settlers,' as they called themselves, the 'usurpers,' as they were termed by others.⁵ Owing to the energy with which the survey and distribution had been carried out by Dr. Petty, this party was now in possession of the lands assigned to them. They held the reins of government ; they filled the army

² *Bodleian Letters*, ii. p. 484 ; Wood's *Ath. Oxon.*, iv. 215. See also Sir William Petty's Will, which says his intention was to 'promote the trade of lead, iron, marble, fish, and timber, whereof his estate was capable.' And on the subject

generally, see Smith's *History of Kerry*, pp. 65, 85, 86, 90.

³ Smith's *History of Kerry*, p. 217.

⁴ *Life of Clarendon*, pp. 106, 116.

⁵ The latter phrase is frequently used even by Sir William himself, probably as the current Irish expression.

and the public offices ; they formed the body of freeholders by whom the restored Irish Parliament, about to meet in Dublin, was elected ; and they urged it as a great merit that they, quite as much as General Monk, had made the Restoration possible. The King, though bound by no tie of affection to men, many of whom had been distinguished by their exertions against his royal father, was obliged, from the peculiar circumstances which had attended his restoration to the throne, to conciliate their interests with his own, and to defer as largely as was possible to their views. The second party consisted of the old Anglo-Irish aristocracy, some of whom were loyal Roman Catholics, others were members of the Church of England. Of this party the Duke of Ormonde was the recognised head. Though small in numbers, it included many of the most distinguished Irishmen of the day. They had lost their homes and their possessions in the service of the King and that of his father, and now expected their reward. With them to a certain extent might be classed 'the '49 men,' or those officers who had served the King before 1649, and had subsequently served the Commonwealth against the Irish. Dr. Petty considered that at the time of the survey they had been harshly dealt with,⁶ and he had tried to protect them ; but the rapacity of their demands now knew no bounds. The third party consisted of the Presbyterians of the North, who had fought against the King in the first civil war, but had supported their Scotch brethren on the royal side in the second. They had seen large portions of their lands in Ulster confiscated in consequence ; and had also suffered heavy losses in the walled towns, where many of them resided, being members of the class principally engaged in commerce. Outside the limits of these parties, all in a greater or less degree British in origin and sympathy, were the great mass of the old native Irish Roman Catholic proprietors, of whom some had been undoubted rebels against the English connection, while others had been innocent altogether, or had only played with sedition. There were some also who had first rebelled against the King, and had then joined Ormonde to fight for the King against the

⁶ *Down Survey*, p. 210.

Commonwealth. But all were now equally prepared to declare, and if necessary upon oath, that they had been loyal subjects of his late Majesty throughout, and had suffered on his behalf in consequence; and all were eager to join in demanding that the lands in the hands of the 'usurpers' should be restored to the original and rightful owners. Such was the tangled skein of affairs; and under these circumstances, the difficulties of settling the tenure of the land of Ireland without exciting almost endless discontents were well-nigh insuperable.

In August 1661, Dr. Petty, who had been elected member of Parliament for Innistioge in Kilkenny, was appointed by the Irish Parliament, which had met early in the summer, a member of a special deputation sent over to England. A plan had already been laid before the King in November of the previous year by Lord Broghill, Sir A. Mervyn, and Sir J. Clotworthy, persons largely interested on behalf of the Commonwealth officers and the Adventurers. This plan professed to show that, after leaving the soldiers and Adventurers in possession of the lands they actually occupied, a sufficient acreage would be found in the 'dubious' and still unallotted lands, to enable the King to compensate or 'reprise' the innocent Catholics, and to indemnify his own supporters and friends. Charles, despairing of ever seeing any perfect settlement of so troublesome a matter, and anxious, above all things, both by disposition and interest, to get rid of the question somehow, caught at the solution thus offered, and on November 30, 1660, signed a 'Declaration,' which was the first step taken towards a settlement.

This Declaration, and the Act which in 1662 gave effect to it in detail,⁷ being framed upon the representations of persons mainly bound up with the Army and Adventurer interest, naturally provided in the first place for the security of the property they held, in return for an increase of the royal quit rents and a grant of one year's value. The grantees were accordingly confirmed in their possessions as existing on May 7, 1659, subject to certain conditions and exceptions. Loyal

⁷ 14, 15 Charles II. c. 2 (Irish Statutes). Return of Members of Parliament, March 1, 1878, vol. ii.

621, 638. Petty was first returned for Enniscorthy also, but chose to sit for Innistioge.

Protestants whose lands had been given to Adventurers or soldiers, and innocent Papists, were to be at once restored to their estates, and the persons removed were to be compensated elsewhere. Special provisoes were also inserted in favour of the Commission officers under the King who had served in Ireland against the Irish rebels before 1649, and in favour of the Duke of Ormonde and thirty-six other particular objects of the royal favour termed 'mero motu men.' All Church and capitular lands were to be restored to their ecclesiastical owners, and enormous grants were made to the Duke of York and a few special favourites. The still undistributed lands, the lands of the regicides, and of some other prominent partisans—amongst others Sir Hierome Sankey⁸—were to form the reprisal fund.

A Commission was appointed under the Declaration of November 30 to carry out the Act, and Sir William Petty received a place upon it. It consisted of thirty-six persons, and they proceeded to appoint a Court of Claims to hear cases, with full authority to decide and arbitrate. Satisfactory to the army as the scheme adopted at first appeared, in practice it worked very differently from what was expected. The 'dubious' lands had been stated to the King as representing one million acres; and to these the lands of the Regicides and other prominent 'fanaticks' were to be added in order to swell the amount. But so favourable to the old Irish proprietors and Royalists did the majority of the Executive Court of Claims, instituted by the Commission, prove itself in judging 'innocency,' that a loud outcry began to arise, as the compensation fund was seen to be totally inadequate to meet the claims upon it. The Protestant interest became seriously alarmed, and the mutterings of an intended insurrection began to be heard. Soon an actual outbreak took place. The Irish Parliament once more intervened and the so-called 'Act of Explanation' was passed.⁹ The Army and Ad-

⁸ Carte's *Ormonde*, iv. 53. He appears, however, subsequently to have recovered some of his estate. He was arrested in 1660. See Rugge's *M.S. Diary*, 228, 229, quoted by Taylor,

Cont. Writers, Reign of Charles II., p. 40.

⁹ 17, 18 Charles II. c. 2. (Irish Statutes).

venturers now had to agree to give up one-third of their lands, on condition of receiving an absolute title to the remainder; and in order yet further to increase the fund for the reprisal of the Protestants who were called upon to make way for innocent Catholics, deductions were made from the estates of the King's grantees and other great landed proprietors. Thus at length was some kind of settlement arrived at, at least in theory; for the task of carrying out these arrangements was long and complicated, giving rise to interminable questions both of law and fact, and leaving behind a legacy of passion and hatred amongst those whose lot it had been in many cases to see, as Sir William Petty described it, 'the shrinking of their hopes into a Welshman's button.'¹

The Act of Settlement by the 43rd section formally acknowledged the debt due to Sir William, and the 101st clause confirmed him in the property actually held by him on May 7, 1659.² The survey was also recognised by the Act as the authentic record for reference in cases of disputed claims: discontented claimants not being permitted to call for other surveys, unless they could show an error of more than one-tenth in the measurements. By the 55th clause of the Act of Explanation his property was again confirmed to him, and a charge on certain of the Adventurers' lands was made by the 100th section 'for his better encouragement to finish the maps and description of the kingdom.'³ On October 14 he again memorialized the Privy Council for the payment of the debt due to him on this account. The memorial concludes by saying, 'Your petitioner hath been at many hundred pounds charge and several years labour, in composing a most exact mapp of that kingdom, which is yet imperfect for want of reasonable help and encouragement,'⁴ and he expressed the wish to be able to finish it; but nothing appears to have been paid him. In 1665 he again petitioned, but whatever assistance he received was either small or in illusory secu-

¹ *The Elements of Ireland*, Nelligan MS., British Museum.

² 14, 15 Charles II. c. 2, s. 101.

³ 17, 18 Charles II. 1663, s. 55.

See too Evelyn's *Memoirs*, ii. p. 96.

⁴ *Down Survey*, Appendix XV. p. 399.

rities. Fortunately the work had become a labour of love, and in the 'Political Anatomy of Ireland' he was at length able to record in 1673 that 'at his own charge, besides those maps of every parish which by his agreement he delivered unto the Surveyor General's office, he had caused maps to be made of every barony or hundred, as also of every county, engraved on copper; and the like of every province and of the whole kingdom.' The map so published, which was engraved at Amsterdam at a cost of 1,000*l.*, was declared by Evelyn to be 'the most exact map that ever yet was made of any country.'⁵

Throughout these transactions Sir William continued to act for the Cromwell family, and was no doubt able to contribute to the protection of his former chief, to whom the King seems to have been personally well disposed, from the attacks of the old Cavalier party, who were constantly attempting to persuade the Court that the former Lord Deputy was engaged in a plot. By means of a trust the property of Henry Cromwell escaped, at least in part, the general confiscation which befell the property of the regicides and those immediately connected with the Protector,⁶ though at a later date the Clanrickarde family succeeded in ejecting the representatives of the Lord Deputy's family, on some question of title.⁷

The following letter to the Lady Cromwell was written several years after, in connection with these affairs, when she was living at Spinney, the country place in Cambridgeshire to which Henry Cromwell retired after the Restoration:—

'Madam,—I hope your Ladyshipp will not take it ill that I have not often troubled you with letters. And I hope you

⁵ *Political Anatomy*, ch. ix.; Evelyn's *Memoirs*, ii. p. 96.

⁶ See 14, 15 Charles II. c. 2, 5, cccxiv. The persons there named are connections by marriage of the Cromwell family. Henry Cromwell died March 23, 1674. The Lady Cromwell died April 7, 1687, only a few months before Sir William Petty.

⁷ See article 'Henry Cromwell' in the *Dictionary of National Biography*. The recently published *Literary*

Recollections of Mr. Lespinasse contain an account of an interesting conversation on the character of Henry Cromwell between Lord Macaulay, Thomas Carlyle, and Sir G. C. Lewis. Pages 84 and 85, note. In the Bodleian Library the conveyance of Henry Cromwell's Irish estate to trustees, Sir W. Russell and Mr. E. Waldron, exists, dated April 3 and 4, 1661. Rawlinson MSS. (A. 253, 188).

beleeve that if writeing or any other labour of mine would availe you, that your Ladyshipp should not want it. I must now desire your Ladyship to renew a letter of Attorney which I formerly had from my dear friend (who is now with God), whereby to enable mee to gett some right from Captⁿ Stopford, who hath abused mee and his best benefactors exceedingly in the matter of the arreares, which I purchased from our friend, who dyed since I commenced a certaine suit against that man. Wherefore I desire your Ladyshipp to send mee a new letter of Attorney to recover the said arreares, with leave to take out letters of administration here for Collonell Cromwell's personall estate in this Kingdome, of which nature these arrears are which I bought of him. And if there bee any other personall estate of his in Ireland which may bee recovered, it shall bee to your Ladyships advantage onely.

'Doctor Wood knoweth all the circumstances of this business, and I hope will inform your Ladyshipp that there can bee noe inconvenience in doing what I desire, even although there were noe legall obligation (as there is) for doing the same. I shall send a man down to your Ladyship to bee witnesse to this Instrument. In the meane time I am,

'Madam,

'Your Ladishipp most

humble and faithfull servant,

'WILLIAM PETTY.

'For Madam Cromwell at Spinny, these.'^s

In the work entitled 'The Political Anatomy of Ireland,' published in 1672, Sir William makes an estimate of the general result of the successive convulsions in the land tenure of Ireland between 1641 and 1663. He takes the area of the country to be 10,500,000 Irish acres,⁹ of which 7,500,000 were good meadow, arable, and pasture. Of this amount 5,200,000 belonged in 1641 to 'Papists and sequestered Protestants.' Of all the land seized by the usurpers, the Papists, he says, recovered 2,340,000 acres; the

^s Dublin, October 10, 1679. Petty MSS. ⁹ 121 Irish = 196 English acres.

‘ Protestants ’ and Churches, 2,400,000 ; and other miscellaneous claimants, 460,000. ‘ Of all that claimed innocence,’ he says, ‘ seven in eight obtained it. The restored persons by innocence and proviso have more than what was their own, 1641, by at least one fifth. They have gotten by forged feoffments of what was more than their own, at least one third ; and of those adjudged innocents not one in twenty were really so.’¹ In his opinion the whole proceedings after the Restoration were a mass of favouritism and oppression, in which the strong trampled on the weak, and the guilty robbed the innocent. ‘ It may be inquired,’ he wrote in 1686, ‘ who caused and procured the said enormities ? ’ ‘ Whereunto it may be readily answered,’ he replies, ‘ Those who got enormous profit by the same.’ ‘ Wherefore it ought to be inquired as followeth :

‘ 1. Who brought in the “ 49 officers ” to be satisfied, wholly excluding the Soldiers ? and who had greatest Pretence to “ 49 ” arrears ?

‘ 2. Whose Chaplains and Creatures were the Bishops whose Revenues were augmented ?

‘ 3. For whose sake were the Articles of 1648 reputed for no miscarriage ?²

‘ 4. Who had the 300 thousand Pounds raised as year’s value and supplement ?

‘ 5. Who in particular had the many vast Forfeitures, which should have been apply’d to the Publick ?

‘ 6. Who put in the 49 Trustees ?

‘ 7. Who named the Nominees ?

‘ 8. Whose Servants, Friends and Creatures, were the Private Grantees ?

‘ 9. Who had the general Power and Government, while these Things were transacting ?

‘ 10. Who were the Privy Councillors, that transmitted these Acts, and what have they gotten by the same ?

‘ 11. What has some one man gotten out of Ireland by and

¹ *Political Anatomy* ch. i. p. 304.

the Commonwealth. See Froude,

² The offer by Owen Roe and the Irish to make a separate peace with

English in Ireland, i. 119.

since his Ma^{ty}s Restoration? And to how many unrestored Estates is the said Gain equivalent?

‘12. By the last Clause of the Act of Settlement the Lord Lieutenant and Council had Power to alter all the premises.

‘Memorandum. That the Duke of Ormond, to keep himself unconcern’d in these Matters, got his Lands restored (A^o 1660) by an Act of Parliament in England, and also his Pardon; and soon after his Regalities in Tipperary were set up.

‘He only endeavour’d to have gotten some Lands in Desmond as holding of his ancient mannors, but quitted y^e same.’³

Such, for the time, was the result of the dealings with Irish land by the successive Governments which existed between the Rebellion of 1641 and the year 1665. The whole story forms one of the most extraordinary chapters in the history of any country, and leaves the reader to wonder how any notion of right or respect for law could survive such an ordeal. ‘If in Ireland you are conquered,’ Sir William afterwards wrote, examining why the number of years’ purchase of land was so far less than in England, ‘all is lost; or, if you conquer, yet you are subject to swarms of thieves and robbers, and the envy which precedent missions of English have against the subsequent. Perpetuity itself is but forty years long, as within which time some ugly disturbances hath hitherto happened, almost ever since the first coming of the English thither. The claims upon claims which each hath to the other’s estates, and the facility of making good any pretence whatsoever, by the favour of someone or other of the Governors and ministers which within forty years shall be in power there; as also the frequency of false testimonies and abuse of solemn oaths,’ rendered a real security of title impossible.⁴ It specially irritated him that in the settlement many of the great Roman Catholic nobles, whom he regarded as the prime fomenters of the Civil War, suc-

³ Nelligan MS., British Museum.
‘Narrative of the Sale and Settlement of Ireland.’ The reference to ‘one man’ is to the Duke of York.

⁴ *Treatise on Taxes*, p. 33. Compare the observations in Arthur Young’s *Travels in Ireland*, ch. vii.

ceeded by perjury and falsification of documents in getting back their own lands and others also ; while thousands of those whom they had misled, their own co-religionists, lost everything irrevocably.⁵

Sir William had escaped destruction ; but, notwithstanding his tenacity, it was only after many suits and after surrendering much, that he succeeded in getting into actual possession of his property, even after his legal title had been recognised and in retaining it when he had once got into possession. The custom still was to farm out the royal revenues to the highest bidder, and the farmers of the Irish Revenue, of whom Sir James Shaen, now an avowed enemy, was the head, were not only a powerful, but an unscrupulous body. Every species of abuse and oppression arose in consequence. The people, Sir William says, preferred ‘to pay anything that was required, rather than to pass the fire of that Purgatory.’⁶ One device was to claim arrears of rent from the present holders as due to the Crown on account of the whole period of the Civil Wars, all such lands having no doubt been charged with a head rent to the State, which, however, the Act had remitted for five years from 1653 ; but there were no doubt some arrears antecedent to 1653, which technically were due from the holders of the lands as representing the previous proprietors. Another device was to find a title for the Crown in the estates of men who had long been in undisputed possession of their holdings, and to eject on the title, often for the benefit of some royal favourite. As the greater part of the land in Ireland during the previous hundred and fifty years had at one time or another been forfeited, the opportunities of raising such questions were endless, and it became a regular trade ‘to find out these flaws and defects and to procure a commission on the results of such inquiries.’⁷ Sir William, with characteristic fearlessness, determined to resist what he considered extortion, even at the risk of the loss of favour. The farmers of the revenue soon made him feel the effects of their displeasure. ‘The

⁵ *Political Anatomy*, p. 368.

⁶ *Ibid.* p. 359.

⁷ *Ibid.* ch. xi. p. 359.

prejudices His Majesty hath taken against me,' he writes to Mr. Oldenburg, one of the Secretaries of the Royal Society, 'are a great affliction. But because I am conscious of no kind of guilt, the more tolerable; notwithstanding I have been punished with the loss of near half my lands already. If His Majesty hath any sparks of kindness for me, try of him the particulars of my faults. If not, I will bear the burthen with as much patience and belief that others have abused him, as any subject he hath.'⁸ A quarrel with the Duke of Ormonde about some lands may have been the cause.

'Dear Cousin,' Sir William wrote to Sir Robert Southwell, 'you did in your late friendly letter blame me for not getting some *terra firma* in England. I answered you by an essay, shewing I had thought of your matter in earnest; and you sent me a paper wherewith—as with okum—I calked up the leaves of my Essay. You advised me in the same letter to compound my present law suites and prevent new ones. I answered you by telling what lawsuites I have; and wished I could prevent one for about 15,000*l.* against McGillicuddy, etc. You in your last promise that dear Neddy shall (I suppose when he is a Maynard or Hales) ferret McGillicuddy, but say nothing of it in the mean time. Cousin, hoping what I am now saying shall not recoyle and kill me, I tell you the Duke of Ormonde is David; but I am Uriah; my estate in Kerry is Bathsheba; you should be Nathan, and then my estate would be the poor man's lamb. Nathan told David that he had Wives and Concubines enough, without taking Bathsheba from Uriah and without murdering Uriah, a worthy man, who had served him bravely in his wars and difficulties; as I had done the Duke and his interest before the King's restoration and now lately, to my great hazard. The Duke, his three sons and his servant, Sir G. L., gott more by the rebellion of Ireland and the King's restoration, than all the lands of Ireland were worth as they left it, and

⁸ November 24, 1663, Petty MSS. In a list of his works found amongst his papers, in his own handwriting, occurs

the following entry, '*Lawsuits*,' inserted between the titles of two poetical effusions.

as in anno 1653; besides advantages which cannot well be expressed by sums of money. You may now say, "What is that to you?" I answer: "he needed not my Bathsheeba, nor the poor man's lamb." I might add that the ship settlement, wherein I am a sufferer, was thereby made top heavy and lop sided, so as she could not bear saile nor work in foul weather. Wherefore, dear Cousin Nathan, go down to Gilgal and tell old David—the first gentleman of Europe and whom I ever sought to serve—before hee dyes, that he should not have meddled with Bathsheeba, nor have caused Uriah to be killed, who by his means hath been set in the front rank of all battles.

'I have sent Neddy the best present I am able to make him; viz. a specimen of my algebra or Logick; which, with what I have formerly said of settling and signification of words, is as much as I think necessary. Doing as wee would be done unto is a very short rule, but requires much practice, and so doth Logick. Adieu.'⁹

The quarrel did not last long, for as soon as the Duke was made aware of an error of fact into which his agents had fallen, he allowed judgment to be entered against him by default. Sir William would have been fortunate if all his disputes had ended so easily.

'I have not as yet contributed,' he wrote about this time to Lord Aungier, 'to the applications lately made to Parliament, nor am I naturally forward to engage with multitudes. Nevertheless your Lordship knows it is my opinion that there is much to complain of; and that wrongs have been done needlessly, wantonly, and absurdly; and it is notorious that I have had my share; yet all this shall not provoke me to speak evil of dignities, nor to desire great changes; nor do I hope ever to see the world and the justice thereof really mended; but I believe there may be a change of evil and evil-doers. I cannot think with your Lordship that some of

⁹ Petty to Southwell, March 1667. See Carte's *Ormonde*, iv. p. 386, where the author charges Sir William

with 'having bragged, he had got witnesses who would have sworn through a three inch board.'

the late rules and practice in Ireland are to be called "old foundations," but do know them to be new, and already rotten. I wish that renouncing all my pretensions, an oblivion of all my wrongs could beget a true settlement upon principles of natural equity, and not the fictions and shifts of interest. I will pray for the peace of Jerusalem.'¹

But peace seemed further off than ever, owing to the policy of the English Government at this juncture.

There was, in the first place, a constant interference on the part of the Court in questions of Irish patronage; and the tendency had already begun to assert itself to pension off on Irish revenues every person to whom it was undesirable to attract too much attention in England. Public opinion indicated Sir William as the author of a set of propositions concerning the government of Ireland which the Duke of Ormonde submitted about this time to the Crown. The first of these insisted on the necessity of an absolute cessation of further grants by way of reward to the King's servants, till the ordinary revenue was able to sustain the necessary charge of Government, and all debts had been fully paid; and another sought to prevent applications being made in England in regard to Ireland over the head of the Lord-Lieutenant, and their decision without consultation with him.² The country, it was pointed out, was weighed down by the charge of worthless favourites. Nor was this the only cause of dispute. Although the Parliament at Westminster, in which Ireland was no longer represented, was ready enough to secure the legal hold of the English interest in Ireland on the land, it was equally determined that that interest should not be allowed to develop the resources of the country in any way which might establish industries, whether agricultural or commercial, likely to interfere with the interests of the landowners and manufacturers of England. A fall of one-fifth in the rent of land, which took place in 1661 in England, was attributed to the import of Irish cattle; and in 1663 an Act was passed at Westminster, practically prohibiting the importation of fat beasts from Ireland into England between the months of July

¹ March 14, 1667.

² *Political Anatomy*, pp. 399-401.

and December.³ Rents, however, continued to fall, and nothing less would then satisfy the English landed interest than the total prohibition of the import into England of Irish cattle, Irish wool, and Irish meat.⁴ A fatal blow was thereby struck, not only at the branch of industry most suitable to the Irish soil and climate, but also at the Irish carrying trade into England. There was a strong opposition to the Bill both in Parliament and in the Privy Council, but the majority were of opinion that 'in a point evidently for the benefit and advantage of England, Ireland ought not to be put into the scale, because it would be some inconvenience there,' and that 'some noblemen of that kingdom lived in a higher garb and made greater expenses than the noblemen of England; and that if something was not done to prevent it, the Duke of Ormonde would have a greater revenue than the Earl of Northumberland.'⁵ It was true that it could be shown that many English counties—those which bought their cattle in Ireland to fat them for the English market—would suffer greatly by the projected legislation, and that the King and a majority of the Peers were opposed to the Bill. But the House of Commons, where the landowners held the preponderating power, insisted on the Bill, and made it a condition of voting supplies. Ireland was also excluded from the advantages of the Navigation Act, and her independent trade with New England was thereby destroyed. Against these restrictions, so injurious not to trade only but to the Protestant interest also, largely composed as that interest was of the commercial and trading classes, Sir William strongly exerted himself. He drew up a paper of 'Observations upon the trade in Irish cattle,' in which he pointed out that the value of the Irish cattle imported into England had been too small to have been the cause of the fall in the value of English land. 'The owners of breeding lands' (in England), he said, 'since the prohibition, have gotten above ten shillings more for their cattle per head than before it, which the owners of the feeding lands (in Ireland) have lost. Moreover, the mariners of

³ 15 Charles II. c. 7 (English Statutes).

⁴ *Life of Clarendon*, p. 959 *et seq.*

⁵ *Ibid.* p. 967.

England have lost the getting of nine shillings and six pence for freight and primage, and the people of England have lost four shillings and sixpence per head more for driving and grazing. The King hath lost three shillings and sixpence per head for customs on both sides: besides officers' fees. And the traders in hides and tallow have lost what they might have gained out of fifteen shillings per head. And the merchants and artizans of England have lost yearly what they might have gained by one hundred and forty thousand pounds worth of English manufactures.' ⁶

He went over to England as the head of a deputation to oppose the Bill before both Houses of Parliament. But so violent were the passions of the English landed interest, that even the intercession of Sir Heneage Finch on behalf of the Crown could not prevail on the House of Commons—then sitting at Oxford, owing to the plague in London—to stop their headlong course, or to give a copy of the Bill to the petitioners. They were told that it might be read to them once, and then they must immediately say what they had to offer in objection.⁷ Sir William next appeared with Mr. Boyle and others before the Committee of the Lords, but there also his efforts were useless, and the Bill passed into law.

In 1664, which Sir William considered the year of Ireland's greatest commercial prosperity, three-fourths of her foreign trade was with England, but afterwards it was only one-fourth.⁸ To alleviate the injury done to Ireland, a project was started to set up an export trade to Holland, and Sir William wrote a paper in support of it; but it does not appear that the plan was ever carried into effect. He also did all in his power to second the efforts of the Duke of Ormonde to encourage the linen trade as some compensation to Ireland, and to establish a bank to supply a circulating medium of exchange for the country on a firm basis. 'We do the trade between England

⁶ Petty MSS. The substance of the argument is reproduced in the *Political Anatomy*, ch. x.

⁷ *Commons' Journals*, 1665.

⁸ Carte's *Ormonde*, iv. 245; *Poli-*

tical Anatomy, ch. x. p. 348, ch. xi p. 362. The Acts in question are 18 Charles II. c. 2, and 32 Charles II. ch. 2. (English Statutes.)

and Ireland,' he wrote at this period, 'as the Spaniards in the West Indies do to all other nations; for which cause all other nations have war with them there.' It was absurd, he pointed out, 'that a ship trading from Ireland into the islands of America, should be forced to unlade the commodities shipt for Ireland in England, and afterwards bring them home, thereby necessitating the owners of such goods to run unnecessary hazard and expense.' The Irish cattle trade was thenceforward diverted to the West Indies, where the cattle were sold in exchange for sugar; then this sugar had to be transported to England in English bottoms, and was sold there to pay what Ireland owed.⁹

The amount of remittances to England was greatly increased by the rise at this period of the new class of non-resident proprietors, and the artificial obstacles placed by the English Parliament in the way of the natural development of Irish trade were rendering absenteeism peculiarly injurious to the country. The ordinary arguments against absenteeism Sir William Petty rejected, because he considered the remittance of rents to England as simply the remittance of interest on money invested in Ireland by English capitalists, which would bring back goods in exchange from England in the ordinary course; but 'to remit so many and great sums out of Ireland into England, when all trade between the two kingdoms is prohibited must,' he argued, 'be very chargeable; for now the goods which go out of Ireland in order to furnish the said sums in England must, for example, go into the Barbadoes, and there be sold for sugars, which, brought into England, are sold to pay for what Ireland owes. Which way being so long, tedious, and hazardous, must necessarily so raise the exchange of money, as we have seen 15% frequently given, anno 1671 and 1672.' Exchange, he points out, naturally corresponds 'with the land and water carriage of money, and the insurance of it while on the way, if the money is alike in both places.'¹ 'If,' he continues, 'it be for the good of England to keep

⁹ *Political Anatomy*, ch. v. p. 323.

¹ *Ibid.* ch. x. p. 349, ch. xi. p. 357.

Ireland a distinct kingdom, why do not the predominant party in Parliament—suppose the Western members—make England beyond Trent another kingdom under commerce, and take tolls and customs upon the border? Or why was there ever union between England and Wales, if the good effects and fruits whereof were never questioned? And why may not the entire kingdom of England be further cantonized for the advantage of all parties?’² ‘If,’ he goes on to argue, following the same line of thought, ‘the whole substance of Ireland be worth 16 millions, as above-said: if the customs between England and Ireland were never worth above 32,000*l.* per annum: if the titles of estates in Ireland be more hazardous and expensive, for that England and Ireland be not under one legislative power: if Ireland till now hath been a continual charge to England: if the reducing the late rebellion did cost England three times more in men and money than the substance of the whole country, when reduced, is worth: if it be just that men of English birth and estates, living in Ireland, should be represented in the legislative power; and that the Irish should not be judged by those who, they pretend, do usurp their estates; it then seems just and convenient that both kingdoms should be united, and governed by one legislative power. . . .

‘In the mean time, it is wonderful that men born in England, who have lands granted to them by the King for service done in Ireland to the Crown of England, when they have occasion to reside or negociate in England, should by their countrymen, kindred and friends there, be debarred to bring with them out of Ireland food whereupon to live; nor suffered to carry money out of Ireland, nor to bring such commodities as they fetch from America directly home, but round about by England, with extream hazard and loss, and be forced to trade only with strangers, and become unacquainted with their own country; especially when England gaineth more than it looseth by a free commerce, as exporting hither three times as much as it receiveth from hence: insomuch as 95*l.*, in England, is worth

² *Political Anatomy*, ch. v. p. 324.

about 100%. of the like money in Ireland, in the freest time of trade.'³

'I have lately perused all the Acts relating to Trade and Manufactures which are of force in Ireland,' he wrote some years after to Southwell, when the full evils of the system had had time to make themselves felt, 'and could without tears see them all repealed as encroachments on the Laws of Nature; for Trade will endure no other Laws, *nec volunt res male administrari*. But, Lord, Cousin, to what a magnitude will the Statutes both of England and Ireland swell, if they grow at this rate. How hard will it be for our lives, liberties, limbs, and estates to be taken away upon Statutes which we can never remember nor understand. Oh, that our book of Statutes were no bigger than the Church Catechism!' ⁴

The hostility of the English Parliament was doubly odious to Sir William, because knowledge and experience had convinced him of the possibility of a great increase in the wealth of Ireland under natural laws, if the country were allowed to develop her own resources without impediment, and the freedom of intercourse which had existed under the Protectorate were allowed to continue. But it was useless, he said, to have broken the power of the chiefs and 'lazing friars,' if the English Parliament was to throttle all the natural industries. Like Sir John Davis, in the previous century, he observed nothing in the character of the people to prevent them attaining a high degree of material civilisation and prosperity. He considered their faults, such as they were, to be the result of the confusion and anarchy of the times, and of ignorance, not of any innate inferiority to the English, or unwillingness on their part to work, if given a fair opportunity, and if order were maintained.

'As for the manners of the Irish,' he said, 'I deduce them from their original constitutions of body, and from the air; next, from their ordinary food; next, from their condition of estate and liberty, and from the influence of their governors

³ *Political Anatomy*, ch. xv. p. 384; comp. ch. v. p. 322.

⁴ To Southwell, September 10, 1678.

and teachers, and lastly from their ancient customs, which affect as well their consciences as their nature. For their shape, stature, colour, and complexion, I see nothing in them inferior to any other people, nor any enormous predominancy of any humour.

‘Their lazing seems to me to proceed rather from want of employment and encouragement to work, than from the natural abundance of flegm in their bowels and blood; for what need they to work, who can content themselves with pctatoes, whereof the labour of one man can feed forty; and with milk, whereof one cow will, in summer time, give meat and drink enough for three men; when they can every where gather cockles, oysters, muscles, crabs, &c., with boats, nets, angles, or the art of fishing; and can build an house in three days? And why should they desire to fare better, though with more labour, when they are taught that this way of living is more like the patriarchs of old, and the saints of later times, by whose prayers and merits they are to be relieved, and whose examples they are therefore to follow? And why should they breed more cattle, since ’tis penal to import them into England? Why should they raise more commodities, since there are not merchants sufficiently stocked to take them of them, nor provided with other more pleasing foreign commodities to give in exchange for them? And how should merchants have stock, since trade is prohibited and fettered by the statutes of England? And why should men endeavour to get estates, where the legislative power is not agreed upon; and where tricks and words destroy natural rights and property?

‘They are accused also of much treachery, falseness, and thievery; none of all which, I conceive, is natural to them; for as to treachery, they are made believe that they all shall flourish again, after some time; wherefore they will not really submit to those whom they hope to have their servants; nor will they declare so much, but say the contrary, for their present ease, which is all the treachery I have observed: for they have in their hearts, not only a grudging to see their old properties enjoyed by foreigners, but a persuasion they shall be shortly restored. As for thievery, it is affix to all thin-peopled

countries, such as Ireland is, where there cannot be many eyes to prevent such crimes; and where what is stolen is easily hidden and eaten, and where 'tis easy to burn the house, or violate the persons of those who prosecute these crimes; and where thin-peopled countries are governed by the laws that were made and first fitted to thick-peopled countries; and where matters of small moment and value must be tried with all the formalities which belong to the highest causes. In this case there must be thieving, where there is neither encouragement, nor method, nor means for labouring, nor provision for impotents.

‘As for the interest of these poorer Irish, it is manifestly to be transmuted into English, so to reform and qualify their housing, as that English women may be content to be their wives; to decline their language, which continues a sensible distinction, being not now necessary; which makes those who do not understand it, suspect, that what is spoken in it, is to their prejudice. It is their interest to deal with the English for leases for time and upon clear conditions, which being performed they are absolute freemen, rather than to stand always liable to the humour and caprice of their landlords, and to have every thing taken from them, which he pleases to fancy. It is their interest, that he is well-pleased with their obedience to them, when they see and know upon whose care and conduct their well-being depends, who have power over their lands and estates, than to believe a man at Rome has power in all these last particulars in this world, and can make them eternally happy or miserable hereafter. 'Tis their interest to join with them, and follow their example, who have brought arts, civility and freedom into their country.

‘On the contrary, what did they ever get by accompanying their lords into rebellion against the English? what should they have gotten if the late rebellion had absolutely succeeded, but a more absolute servitude? and when it failed, these poor people have lost all their estates, and their leaders increased theirs and enjoyed the very land which their leaders caused them to lose. The poorest now in Ireland ride on horseback, when heretofore the best ran on foot like animals.

They wear better clothes than ever ; the gentry have better breeding, and the generality of the plebeians more money and freedom.’⁵

It was, he said, often his lot to hear ‘wise men,’ when bewailing the vast losses of England in suppressing rebellions in Ireland, and considering how little profit had come thereby, proceed to wish in their melancholy ‘that (the people of Ireland being saved) the island were sunk under water,’ while others wished for another rebellion as an excuse for stamping out the inhabitants. To these melancholy philosophers he used to reply that ‘the distemper of his own mind’ caused him to dream that the benefit of their wishes might practically be obtained without the adoption of such very extreme courses, ‘if all the moveables and people of Ireland and of the Highlands of Scotland, were moved into the rest of Great Britain,’ where he was prepared to show there was abundant room and occupation for them ; though he thought it as well to guard himself by saying that, however ingenious and attractive these speculations might be, they were to be considered ‘a dream or reverie,’ rather than rational or serious proposals.⁶ He did, however, seriously favour a considerable State-aided emigration from Ireland to England and *vice versâ*, as affording a partial solution of many political and religious difficulties.⁷ This proposal he renewed more than once. He also suggested that the inhabitants of New England might, as had been proposed in the time of the Commonwealth, be removed to Ireland. ‘The Government of New England, both civil and ecclesiastical,’ he wrote in almost prophetic words, ‘doth so differ from His Majesty’s other dominions, that ’tis hard to say what may be the consequence of it. . . . I can but wish they were transplanted into Old England or Ireland (according to proposals of their own made within this twenty years) although they were allowed more liberty of conscience than they allow one another.’⁸ But his favourite idea was the union of the countries.

⁵ *Political Anatomy*, ch. xii. p. 366.

⁶ *Political Arithmetic*, ch. iv. p. 252.

⁷ *Political Anatomy*, ch. v. pp. 318, 320.

⁸ *Political Arithmetic*, ch. v. p. 269. The allusion is to the expulsion of Roger Williams from Massachusetts and the persecution of the Quakers.

‘May not the three kingdoms,’ he asks, ‘be united into one, and equally represented in Parliament? Might not the several species of the King’s subjects be equally mixt in their habitations? Might not the parishes and other precincts be better equalized? Might not jurisdictions and pretences of powers be determined and ascertained? Might not the taxes be equally applotted and directly applied to their ultimate use? Might not dissenters in religion be indulged, they paying for a competent force to keep the public peace? I humbly venture to say, all these things may be done if it be so thought fit by the Sovereign power, because the like hath often been done already, at several places and times.’⁹

In order to set the example of promoting the development of the country, he established an industrial colony of English Protestants at Kenmare, in Kerry, with iron and copper works; and attempted to develop the sea fisheries. For the former undertaking ore was shipped from Wales and Bristol, where Sir Robert Southwell, who lived near the city, at King’s Weston, probably assisted in the undertaking. The ore was sent to Kenmare, where the woods which clothed the mountains afforded a large supply of the best fuel.

But there were great local difficulties to contend with. ‘The Ministers of Justice,’ he writes, ‘have been often abused in their persons and goods; they have been either terrified from proceeding in their duty, or else wearied into a compliance with or connivance at those whom they before sought to punish. . . . In all the Baronies—being about 100 miles in compass—there is resident but one Minister, and he without Churchwardens or Service Books; officiating only now and then in one place, and who, although he have 300*l.* due to him, is now ready to perish for want of maintenance.’¹

Some instructions given to his agent illustrate the difficulties of the situation, and show the minute care with which he superintended every detail.

⁹ *Political Arithmetic*, ch. v. p. 269.

¹ Report on the condition of Kerry

addressed to the Lord-Lieutenant.
Petty MSS.

‘Mr. Cheesey.—Instructions for Kerry.

‘By SIR WILLIAM PETTY.

‘1. When you goe into Kerry find out Cornelius Sulivane of Dromoughty, in the barrony of Glanneroughty, and take directions from him for goeing into all the woods in the 2 barronyes of Glanneroughty and Dunkerron, and particularly those of Glancurragh, soe as to satisfie yourself what clift ware, ship tymber, house timber, and other wooden commodities may bee made out of them, and at what charges they may bee brought to the water-side, how far each respective wood.

‘2. I would have you take the best accountp you can of all the staffes and other clift-ware which now lyeth upon the river, and examine by all the meanes you can what part of them was brought from any other than my woods, and to oppose the shipping of any untill all controversyes of that point bee cleared, to prevent the cutting of any wood but by my order, to bringe in English and Protestante workmen in the greatest number you can, assureing all such who are able and honest they shall have the best incouragement in Munster, and forbidding all tenants from paying any rent to any but myself or my order.

‘I would have you encourage Sandford and Sellberry, and lett Sandford goe on with his boate, slender worke, such a one as may be able to carry 20 tunne to Corke or Lymericke, and sett as many hands as you thinke convenient to worke upp the timber already fallen into clift-ware, and sawing-tymber, according to such scantlings as I have given you.

‘And to agree with as many as you can to take the rent of the land or stocke for their wages.

‘To take care that noe pipe staffes coming from any other woods be shipped before they have paid the lawfull duties and customes for the same.

‘To consider what conveniency is for making of sale for beeefe and fish.

‘Dublin, dated the 24th of May, 1666.’²

² *History of the Kingdom of Kerry*, pp. 279–80.

Meanwhile for three weary years the struggle with the farmers of the revenue had continued, complicated by another with the '49 men' who claimed the whole of Sir William's Limerick property. Events in England influenced the situation. The death of the Lord Treasurer Southampton in 1667, followed as it was shortly after by the fall of the Chancellor Clarendon and the rise into power of the heterogeneous body of statesmen known as the Cabal, had for an immediate consequence the retirement of Ormonde from the Lord-Lieutenancy of Ireland. John Petty was thereupon removed from the Surveyorship, and was succeeded by Sir James Shaen. Misfortunes, as usual, did not come singly. About the same time Sir William's house in London was destroyed by the Great Fire, and his surrounding property seriously depreciated in value.

'You know,' Sir William writes to a friend in 1667, 'when I had much money in the bank, much land in Ireland, and some houses in London; but the houses and money are gone, and only so much of the land remains as is a continual fountain of vexations to me, for I have about thirty lawsuits.'³ In another letter he gives the following enumeration of the storms which had befallen him since the Restoration:—

1. The "49 men" siege of my Limerick concernment, and Sir Alan Broderick; 1661 and 2.

2. The Court of Clayms and Innocents, 1663.

3. The great "Double bottom," 1664.

4. The Plague, 1665.

5. Lord Ranelagh and the Fire of London, 1666.

6. War with Lord Kingston, 1667–8–9–70 and 1, when Sir W. Fenton died.'

In addition to these, he got involved in a suit with Sir George Carteret, the Treasurer of the Navy, who had joined him in one of his Irish undertakings.

During the first of these storms, Sir Alan Broderick, 'one of the '49 men' who had put in a claim to part of the Limerick lands, and in other respects also was a sort of second edition of Sir Hierome Sankey, being given to preaching in Dublin

³ Petty to Southwell, January 21, 1667.

when not engaged in soldiering elsewhere, sent Sir William a challenge to fight. Sir William, however, notwithstanding his recent knighthood, was not more desirous of distinction in martial exercises than in the days when Sir Hierome's friends had pressed on him the command of a troop of horse. Being the person challenged, it lay with him to nominate place and weapon. As he was very short-sighted, he claimed, in order that his adversary should have no unfair advantage over him, that the place should be a dark cellar, and the weapon a great carpenter's axe. This turned the challenge into ridicule, and Sir Alan declined so unexpected a form of contest.⁴

⁴ Evelyn's *Memoirs*, vol. ii. p. 96. *Bodleian Letters*, ii. p. 485.

CHAPTER VI

DOMESTIC AFFAIRS

1667-1678

Marriage—Offer of a peerage—Housekeeping in 1672—Character of Sir William Petty—Correspondence with Lady Petty—Family troubles—Business affairs—John Aubrey—The farmers of the revenue—Commitment for contempt—Portrait by Sir Peter Lely—Southwell as an adviser—Colonel Vernon.

IN 1667 Sir William, who was now forty-four years of age, married Lady Fenton, the widow of Sir Maurice Fenton, and daughter of Sir Hardress Waller, one of the most distinguished of the Parliamentary officers. Sir Hardress, as already seen, had materially assisted Dr. Petty at the time of the survey, by becoming one of the securities in a bond for the punctual execution of the contract. His signature appears to the warrant for the execution of Charles I. At the Restoration he suffered for his opinions. Narrowly escaping the death penalty, he was imprisoned for life in the Tower, and appears to have died there.¹ Aubrey describes Lady Fenton as ‘a very beautiful and ingenious lady, browne, with glorious eyes.’ Her tastes, combined with a certain love of splendour, are contrasted by Evelyn with the simple habits of Sir William. ‘When I,’ he says, ‘who have knowne him in meane circumstances, have been in his splendid palace, he would himself be in admiration how he arrived at it; nor was it his admiration for splendid furniture or the curiosities of the age; but his elegant lady could endure nothing mean, or that was not magnificent. He was very negligent himself, and rather so of his own person, and of a philosophic temper. “What a to-do is here,” would he say; “I can lie in straw with as

¹ Noble, *Lives of the Regicides*, ii. 285.

much satisfaction." . . . She was an extraordinary wit as well as beauty.' ²

Some bantering lines, signed 'Dorothy Anwacker,' thus allude to his marriage :—

'Petty complains that nature was unkind,
In that she made him heavy-eyed and blind,
Never considering that the mighty three,
Fortune, Love, Justice, were more blind than he.

'The Blind were all his friends, for understand,
It was blind fortune gave him all his land.
Blind love, in her he had gave him a wife,
Rich, fair, and civil, without brand or strife.' ³

'This is the fourth day,' Sir William writes from Dublin, in the autumn of 1667, to Captain Graunt, 'since my wife's arrival in the town, and I thank God that her presence and conversation have been a continual holyday unto me; so as I have declined all other business till this time, the better to entertain her.' 'I am almost weary of living,' he says a few weeks later, 'did not my wife, as she is at this moment doing, refresh me with the lute strings, to which purpose I am contented that our dreadful account should be inflamed with two packets of lute strings, which will cost about 17 or 18 shillings.' ⁴

The following letter gives an insight into the troubles of furnishing in 1668 :—

Sir William to Lady Petty.

'I have sent an inventory of such goods as we have. Consider what you have of your own, and then consider also what more is next necessary to be bought, to the value of about 300*l.*; whereof a good part must be in linen; as also a pair of horses, about 50*l.*; with another pair, about 60*l.*; and a pair for loading, to make them up to six. I suppose we may have them here, either bays or blacks. The great art will be in buying these horses, next to the finding means to pay for them.' ⁵

² Evelyn's *Memoirs*, v. 95–97.

⁴ Petty to Graunt, Oct. 13, Nov. 28,

³ Petty MSS. Sir William Fenton, son of Lady Petty by her first marriage, died on March 18, 1671.

1667.

⁵ Dublin, Oct. 15, 1668.

By his marriage Sir William became connected with the family of his friend, Sir Robert Southwell, and they now addressed each other in their correspondence as cousins.⁶

About the time of his marriage, Sir William appears to have been offered a peerage; but there was a condition annexed—a round contribution to the Exchequer of the impetunious King. The offer came at a peculiarly inopportune moment, when his house in London had just been destroyed, and in the midst of his struggle with the farmers of the revenue. It appears to have been made through the Bishop of Killaloe, a friend of Lady Petty; the title offered, according to Aubrey, being that of Baron Kilmore.⁷

To the Bishop Sir William replied as follows:—

‘My Lord,—I thank you on my wife’s behalf for your good intentions; but is it better for me at this time to buy titles, or to get me a house and furniture, whereby I may do for your Lordship as your Lordship hath done for me; and to rebuild my ruins at London; to pay my year’s rent; to restore the iron works and fisheries of Kerry; to buy off my incumbrances, and to carry on the just and necessary war against Lord Kingston?

‘I will not tell your Lordship what I think of people who make use of titles and of tools; nor would I fall into the temptation of doing the like. The end of those things will be like that of the Dublin tokens. I had rather be a copper farthing of intrinsic value, than a brass half-crown, how gaudily soever it be stamped and gilded. I might have had those things a long time ago, for the third part of what your Lordship propounds. Beside, if ever a thirst of that kind should take me, I hope to quench it at the very fountain, where those matters are most clear and wholesome. Herewith then, I thank your Lordship for the honour you intended me, and if I can serve your Lordship’s friend by being his broker

⁶ Lady Petty was descended from Sir Thomas Southwell, whose brother Anthony was godfather to Sir Robert Southwell.

⁷ *Bodleian Letters*, ii. 485. The estuary now known as the Kenmare River is marked on Sir William Petty’s map ‘Killmare.’

in the market of ambition, let him give me his selling price, and employ your Lordship's most thankful, etc., etc.,⁸

‘WILLIAM PETTY.’

The death at this moment of John Petty, who had managed his affairs in Ireland and understood the labyrinth of suits in which they were involved, not only deprived him of a near relative, but of a trusted adviser. Sir William's marriage in some respects also increased his troubles. The ‘war with Lord Kingston,’ which is frequently referred to in his papers, was originally undertaken on behalf of Lady Petty's son by her first husband, whose cause, once espoused by Sir William, was pushed by him with characteristic determination. A Mr. Napper also, who had married Sir William's only sister, died, and left his wife and family dependent upon his brother-in-law. Sir William was not wanting to his duty. Writing to Southwell, he says: ‘I am, and ever shall be, a friend, and as an only brother to my sister and hers; and will do for them as for my own self; but God knows how long I shall be able to act for either. Let her doubt nothing of those steady principles whereby I have ever acted.’⁹ The desponding tone of his letter was no doubt owing to the losses he had himself sustained. ‘Sir William,’ Lady Petty says, writing to Lady Ingoldsby, ‘lost about 4,000*l.* by the fire of London; has lately paid about 2,000*l.* for the “yearly value” (which is more than the land is worth); has expended more than 5,000*l.* in Kerry, without a penny return; hath laid out for William Fenton about 1,500*l.* more than he hath received; is now paying 700*l.* of Sir Michael Fenton's debts; and lives all the time on money taken up at interest. Consider that I have neither jewels, plate, nor house to put my head in.’¹

Sir William himself writes in the same strain to Mr. Waller: ‘Exchange being at the intolerable rate of ten per cent., and we having contracted many debts for furnishing our house, it behoves us to be frugal;’² and Mr. Waller's

⁸ Earl of Kerry's MS. The original is stated to be among the MSS. of Sir Thomas Phillips.

⁹ To Southwell, Sept. 19, 1671.

¹ July 18, 1671.

² Nov. 14, 1671.

reply appearing not altogether satisfactory, Sir William in his answer goes a little into details. 'As to your housekeeping,' he says, 'upon perusal of the accompte, I find there has been about eleven in family: viz. yourself, Crookshank, Cary, Antrobus, Sency, Harry, Bryan, and the groom, Jane, Margaret and Mary; besides my cousin, before Crookshank came. Now I see no necessity of above four, yourself, Crookshank, a groom, and maid. I also find there has been spent in housekeeping since my departure above 250*l.*; at which rate the whole year's expense must come to 340*l.*; nothing being reckoned for Marshall, Rutter, or several other agents in the country; which being put together and spending proportionately, will amount to between 400*l.* and 500*l.*; whereas I think 200*l.* is very fair for doing all my business out of Kerry. I also find that in the same three quarters of a year there hath been spent in law, letters, and travelling expenses, and agents' salaries, about 350*l.*, which in the whole year will amount to above 450*l.*; whereas I conceive that about half the same would very well suffice. To be short, I conceive that comparing the business which hath been done with your accounts, that about 400*l.* may defray the charges of the lands, letters, travelling charges, dyet, horsement, and two servants' wages in Dublin; more than which I neither can nor will expend, both for the premises and all your salaries, considering that you have a house, furniture, and horses, over and above the sum; which cannot be worth less than 50*l.* or 60*l.* per annum. I now perceive what hath ruined me, forasmuch as till now I never could come to the sight of any of my accounts; and being kept in perpetual darkness.'³

At this period Sir William was almost continuously in Ireland. 'As for my health,' he writes to Lord Anglesea from Dublin, 'it is ordinarily well. What I do here are matters of recreation or business, or mixt. The first sort are such things as I exercised myself with before the age of twenty, to delude myself that I am now as then. The second sort of my business is to rectify double charges in the Exchequer, and prevent double payments, to contest with

³ Jan. 9, 1672.

✓ proud Beggars, and, lastly, I thank God, to provide employment for 300 useful artisans and labourers without profit to myself. The last sort are "Political Arithmetick;" and the "Political Anatomy of Ireland;" whereupon I think depends the Political Medicine of that country; and these things too without passion or interest, faction or party; but as I think according to the Eternal Laws and Measures of Truth. As for complaints, the Poor ever complained against the Rich; one endeavoured to cheat or oppress the other; and those out of power did ever find fault with those that are arm'd with it. Trading was ever dead among the Lazy and Ignorant; nor is it any more than good luck for the Ingenious and Industrious to thrive, or for the Innocent to be punished as malefactors. But if you would have me pitch upon the partialitys which may diminish our grievances in Ireland, I shall shortly do it as well as I can; and, I hope, without reflection on any person in power or envy of his preferment; altho' I do not think that shiftty and transient expedients, or any gratifying of humours or opinions, can produce any permanent advantage; for I ever fear'd the Act of Settlement (how much I own it ought to be preserved) not to have been built upon so firm ground, as ought to have been had at the price.'⁴

As already seen, the house which he had erected in Lothbury had been totally destroyed in the Great Fire. The disaster was serious, but never perhaps did the elasticity of his mind come out more strongly. No sooner was he aware of the extent of his losses than he set to work to repair them. He at once addressed a paper of inquiries from Dublin to Captain Graunt, in order to ascertain the plan proposed for the restoration of the City. 'What,' he inquires, 'do the several parties give as the provocation of God unto this vengeance on London; and to what action or motion does this providence incline them?' He soon had made up his own mind on what he intended to do himself. 'I intend,' he said, replying to his own inquiry, 'God willing, to introduce the use of brick into the city; for I find that a sixth part more housing may be built upon my ground, than with stone, and at less charge.'⁵

⁴ Dec. 17, 1672.

⁵ To Graunt, August 1667.

The versatility and pertinacity which this letter exhibits, and the fund of humour which enriched an otherwise serious nature and enabled him to see the comic side of events and to laugh over his own failures, were the gifts which enabled him to surmount his various troubles. He builds houses in London and Dublin ; reads papers before the Royal Society ; keeps up his interest in medicine ; commences a metaphysical treatise ; plunges deeply into political economy ; not only translates the Psalms into Latin verse, but also what he irreverently termed ‘the catterwouling songs’ of Sir Peter Pett of the Board of Admiralty, one of his colleagues on the Council of the Royal Society ; writes a quantity of good Latin and bad English original verse ; builds a new kind of chariot, not to mention the ‘double bottom ;’ and does all these things in the intervals of his endless suits with the farmers of the revenue, and the battle with Lord Kingston, besides keeping up a large private correspondence. He gets a ‘custodium’ of his lands in Kerry, and ‘is gone,’ Lady Petty despairingly writes to Sir Robert Southwell, ‘upon the unlucky place himself ; which she is very sorry for, considering how unfit he is to ride in such dangerous places.’⁶ He draws up schemes for the education of his own children and for Southwell’s son Edward ; he dabbles in theology, and consoles himself in dreamy and rather mystical speculations on the character and nature of the Deity, for the terrestrial troubles which he suffers owing to ‘there being always some devilish enemy, who sows tares amongst the corn at night.’⁷ His old habit of mimicry was also an unfailing source of consolation ; and he could not resist falling back upon it notwithstanding his constant resolves to abandon a practice too dangerous for unsettled times. He could speak ‘now like a grave orthodox divine ; then falling into the Presbyterian way ; then to Fanatical, to Quaker, to Monk, and to Friar, and to Popish Priest,’ all of which Evelyn declares ‘he did with such admirable action and alteration of voice and tone, as it was not possible to abstain from wonder, and one would sweare to heare severall persons, or forbear to think he was not

⁶ Aug. 11, 1683.

⁷ To Southwell, April 1684.

in good earnest, an enthusiast, and almost beside himself. Then he would fall out of it into a serious discourse; but it was very rarely he would be prevailed upon to oblige the company with the faculty, and that only amongst most intimate friends. My Lord D. of Ormond once obtained it of him, and was almost ravished with admiration; but by and by he fell upon a serious reprimand of the faults and miscarriages of some Princes and Governors, which, though he named none, did so sensibly touch the Duke, who was then Lieutenant of Ireland, that he began to be very uneasy, and wished the spirit layed, which he had raised; for he was neither able to endure such truths, nor could he but be delighted. At last he turned his discourse to a ridiculous subject, and came down from the joint-stool on which he had stood, but my lord would not have him preach any more.’⁸

Sir William was now the father of two children: John, born in February 1669; and a daughter. But in 1670 both son and daughter died, apparently of small-pox, in Dublin. From this time forward Lady Petty evinced a great and natural dislike to the idea of returning to the Irish capital. The fate of her two children is alluded to in a letter from Sir William to Lady Petty in 1671. ‘I did not forget upon the 17th and 18th,’ he says, ‘to commemorate the translation of our dear children; but without any regret or chagrin, and with much pleasant contemplation upon their blessed estate and condition, practicing as well as I could how to resign our best things to the disposure of God and to acquiesce perfectly in his will. I hope you have done the same and no more.’⁹

In 1672 Lady Petty had another daughter, Anne.

Sir William to Lady Petty.

‘Dublin: 13^o July 1672.

‘I hope, my Dearest, That this will find you safely delivered, the news whereof will be of all others most welcome. I

⁸ Evelyn’s *Memoirs*, ii. 95–97, 1, buried in St. Bride’s Church, Dublin, 417. Jan. 28, 1670.

⁹ March 19, 1671. John Petty was

am very weary of this separation, but hope to make this one the Prevention of any more. Otherwise this it selfe had been intollerable. I and my affaires do still mend, tho' I shall trouble you with none of them. Onely I wish that you have or may get such monyes as are necessary without troubling your mind in the least. I presume Ewing has ere this payd the 30th and that the Lothbury rents, due about the 7th instant, have done somewhat, whatever Beechers prove. But as to this point I say, as in my last, do any thing rather then entertayne an anxious thought. Draw what you will, I can pay it at sight. I thinke powerfully of you and pray as often for you. You may repay this care and kindness, onely by sending mee the Newes of your being well; and that I have now 2 strings to my bow, and that you are patient under the providences of God, and will forgive the Injuries of my absence, Who neverthesse am

‘ Yours entirely,
‘ W. P.

‘ Let me know particularly how you did this last night for I have dreamt very much about you.’

‘ Dublin : 16^o July 1672.

‘ Notwithstanding the necessity I had to stay here, I am full of perplexity that I did not breake away from all my businesse to be with you. I did allwayes presume upon our deare friend, Dr. Cox, his kindnesse and care of you, and his goodnesse is almost halfe the cause why I am not with you. I should now write a great many lynes of thanks to him, but pray shew him this letter, that he may see I write nothing to that purpose, as conceiving it too big a worke to be performed by words. I desire that hee would appoint a name to our Child which I trust to God is by this time borne and well. If it be a Girle, I except against your name onely because it rymes to Petty.¹ Why may it not be Anna Maria, the name of both your sisters, or Katherine, the Queenes name; And if a boy, why not Charles or James? To conclude, desire Dr. Cox to helpe you alsoe in this weighty matter.

¹ Elizabeth, Betty; Petty.

‘For my owne part my businesse is and shall be, night and day, though without ostentation, to think of you and pray for you, and to make our being more quiet and comfortable hereafter than hitherto. In these endeavors I remaine,

‘Yours intirely,

‘W. P.’

‘I vehemently fear,’ Sir William told Lady Petty, ‘that an Irish estate cannot exist without the owner daily, for sense and inspection. But I would have you satisfy yourself of this matter by your own actual experience upon the place.’² Lady Petty, however, continued to be very reluctant to leave England, for a few days after we find Sir William writing to her as follows:—

‘Aug. 20, 1672.

‘To yours of the 13th my deerest, I say God is angry with us, that we cannot meet without so much inconvenience. In short I cannot stir from Ireland, unless all I have done should relapse again. I am a slave and a prisoner, nor did I ever believe that you could come without inconvenience; wherefore stay where you are, and let us pray and withal endeavour that the time may be shortened.’ He very soon, however, repented of his consent, as only a week afterwards he writes to Lady Petty: ‘In my last perceiving your indisposition to come hither, I said that then you might stay there. But opinions and even lawes against nature are not stable and permanent. Wherefore I say again now, why may you not take a time before All Hallows tide to come to me, leaving your family as it is and bringing only a man and a maid. If your train and attendance in your journey be not great and splendid, consider that here you are sufficiently known, and therefore shall not want these outward signs to shew who you are. Well, I say again, methinks you might come with one man and a maid, and make any shift rather than let me be here alone and as it were a prisoner: aye a slave for your sake and concernments. . . . I am in the fairest way to beget a thoro’ settlement in my affairs that there ever yet was. Let the

² July 30, 1672.

work not fall to ruin or decay by my absence hence, neither let me work here without the best wages, your company.'

Such entreaties were irresistible, and in consequence Lady Petty went over to Ireland early in the autumn. She had not been long there before anxieties, of far greater consequence than pecuniary embarrassments, or the tortuous processes of the law, made her regret that she had yielded to her husband's entreaties. The infant daughter left in London was taken dangerously ill, and it was long doubtful whether she would not succumb. Writing to Dr. Cox, the physician under whose care she was placed, Sir William says: 'We have received your several letters. In giving you all the thanks we at present can for your patient and affectionate care, we can acquiesce in the will of God by whom all these things came to pass. How smart the blow is and how sore the place whereon it lights, and what a concurrence there hath been of several other perplexities, many know, and my poor wife thinks it an aggravation that she is again with child. But be things how they will, there is one short remedy for all, viz. That they are the will of God, which we pray may be done. Hopes of better news do a little flatter nature, but fail much of satisfying my understanding that we shall be happy even in that: wherefore I again conclude, God's will be done. As for my wife she hath a reciprocation of sharp resentments and stupidity, and is now lately fallen into her tickling cough, &c., and these things too must be borne. What more to say I know not, but to beg you to have the same courage for us as I here pretend to, and to impress the same upon all the servants that attend the uncomfortable employment, assuring them that they all shall be considered, whatever the event of their labors be. I know of no better use for all men can spare above necessary food and raiment, than to do such justice, and it is the honestest way of giving it to the children for whom we are solicitous.'³

The child recovered. We get some glimpses of her, and of her brother Charles, born in 1673, in the following letter, written two years after:—

³ Jan. 25, 1673.

Sir William to Lady Petty.

‘London, 31 July 1675.

‘Yours of the 20th instant mentioning your return to Dublin, put us all into a flame of joy. Charles rejoyceth, but little dreames how hee must bee whipt for all his Rogueries when you come, which work unless you come suddenly I must undertake myselfe. But as for My-Anne I protest I think her, taken altogether, the most desirable child I know. I assure you shee is neither forward nor abates a jot of her lusty feeding and sound sleeping, nor of her merry humor and pretty tricks, for shee also growes a mighty mimick and mocker of her brother Charles, and when hee bawles, will counterfet a wondring at him, as well as Lacy.⁴ If you doubt what I say, make hast to disprove mee upon the place, and let mee know where I shall meete you, but I will not come far, for I will not leave my children. I was 2 nights at Windsore, without pleasure, upon your accompt, and would goe to Tunbridge and the Bath, and to Rumsey, but for that reason. The great point you have to do before you come away is to fix with my brother Tom and James, taking security of them; for I need neither of them, and do with my owne hands what Jemmy did, with far lesse trouble then that of calling upon him, &c. Beware of caprices about our writings and deeds. There is one Capt. Shieres, that lives neere Dublin, who would be a fit instrument in our busines, If Gwyn be not. God blesse my brother Tom. I wish it sincerely, but feare to have much dealing with him. Jemmy is much more likely, if hee can bee fixt right. God direct you in these matters: they are your brothers and your father’s children, wherefore I would endure much. These my deare are the cheife direccions. I have to give you thanks for sending us mony or rather for getting it in. You need none. Crukshank may pay it immediately to merchants without troubling my Brother Tom, who sends no accompt, notwithstanding his promises; nor answers any letter, but writes a deale of the most frivolous stuffe imaginable. When your busines is done, wayte a little for a faire passage

⁴ The famous actor.

to Chester water, which I think is the best way for your condition, it being summer time and the nights short and light. . . .

‘I wrote in my last the excellent newes of our quitrents being reduced to a very good pitch. There hath since fallen some water into our wine; but upon that accident, I take heart againe, and hope to make it better than before. On Tuesday next we shall have another Tug, especially about the arrears.

‘I hope you have been at Balliboy and among other matters settled with Fletcher, who I believe intends to remove his goods to Cloncurry, which should be prevented by seizing y^m for our arrears.

‘Adieu my dearest,

‘W. P.’

Sir William’s hands appear at this time to have been full of business of all kinds. He was again urging upon the English Government the adoption of a plan for the improvement of the Irish revenue, a subject rarely out of his thoughts. To do justice to his plan it was absolutely necessary for him to be upon the spot, and he was therefore reluctant to leave England. Under these circumstances Lady Petty, who had become the mother of a second son, Henry, born October 22, 1675, undertook to remain in Ireland, and to supply her husband’s place. If anything could mitigate her separation from the children to whom she was so tenderly attached, it must have been the habit to which Sir William constantly adhered of keeping up a correspondence at once most regular and minute. Every circumstance, however trivial, relating to the children which could interest a mother was almost daily dispatched to her, while her conduct was assisted and directed in all the points where advice could be of use.

Interspersed with these directions are instructions for her guidance in business. ‘I suppose,’ Sir William writes in May from London, ‘this letter will come to your hand before your arrival in Kerry. I thought to have said Oceans about that Gulf of trouble; but know not what to say more, than what was in the letters whereof you have a Catalogue, nor was I willing to perplex you with new and perhaps contradictory

directions. Wherefore be courageous, let not every cross affect you; let none break your rest; talk with every body; hear all their tales, true or false; see with your own eyes where you can; compare receipts with the Books and Rent Rolls; make no confounding haste; seem to know and understand more than you do; cover your ignorance with silence, nods, shrugs, &c. Make no lasting nor great bargains rashly; let Jamesey keep a diary of all your actings, copy your letters of business, bundle up and endorse your papers; and let God be a light to your feet and a Lanthorn to your paths.' ⁵

'Sir,' he writes to Mr. Cosby of Balliboy, 'I must once more take the liberty of writing about the Quakers you keep in prison. The occasion of their being troubled was from their tythes. They say that although they cannot pay them in a formal way, yet they have always permitted you to take even what you please, so as for want of formality only, and no way prejudicial to you, they were put into the Bishop's Court, as they say, to accumulate a new crime upon them, viz. a contempt: which they say also was not want of appearance, but of form only. Now if upon the whole matter, these men do not deny the King's nor the Bishop's power nor jurisdiction, nor withhold the Tythe, why should they be persecuted; whereby the commonwealth is deprived of their labour, and His Majesty's intentions, lately declared, frustrated; and the Church and yourself evil spoken of? You know that the way is not apostolical, nor is there one Quaker less in Ireland, since you took this course, but rather the more; as His Majesty also observed in his declaration; and,' he sarcastically concludes, 'let me once more desire and advise you to quit this method of reducing them, and instead thereof try public preaching and particular admonitions of them from the Scripture; and the Lord bless you evermore.' ⁶

The following letter from William Penn alludes to this affair:—

'My old friend,—I have broacht y^t affaire to the great man. He took it marvellous kindly and desired me to give it him in

⁵ May 4, 1675.

claration' is the Declaration of Indul-

⁶ Jan. 24, 1675. The King's 'De-

gence of 1672.

writeing, promissing to name noe person, but upon assurance to thrive. Now I entreat thee most earnestly to have in writeing what was read to me of Eng(land) and Ir(eland) as to revenue. The bearer waites wholly for it, for this night I am to goe to him again. I was with him yesterday about my own business, and then fell into discourse about this. Ireland took as well as England. Now is the crisis; therefore pray fail not, and if anything be to be done for the retriueing my business about the Lord Ranalagh, lett me have two words; and what progress is made in our Irish affaires there. I will run, goe, or doe ten times more for thee at any time. Noe more, but once more beseech you not to fail for both our sakes. In great hast.

‘Thy sinceer friend

‘WM. PENN.

‘Windsor: July 30, 1675.

‘For my old and worthy friend Sir William Petty at his house in Pecedille. Speed and Care.’

Amongst others whose good opinion Sir William at this time gained was John Aubrey, the celebrated Wiltshire antiquarian.

John Aubrey to Sir William Petty.

‘Draycot, July 17, 1675.

‘Sir,—My quondam neighbour and ever honoured friend, Sir James Long, hath importuned me to leave my all till October to wayte on Him. I pass my time away here merrily in ingeniose conversation, and with very great Beautys. But notwithstanding all these very great divertisements, I cannot, nor shall not while I live, ever forget the kindness, the great favour, friendship, and honour, in my *case*, of my ever honoured friend Sir William Petty, to so unlucky and unfortunate a person as your humble servant. Truly, Sir William, I have been so battered with the afflictions of this world, that I am almost weary of it, and could I with a wish advance my fortune, it should be more to endeavour by way of retaliation and gratitude (which if I can plead to any virtue ’tis that) to express my thankfulness to two or three friends, whereof Sir W^m Petty is the chiefe: “Nescio quod me tibi temperat

astrum.”⁷ Could such a Monk, such an object as I am, think that Sir W^m Petty, who has so great concerns of his own, so great thoughts for the advancement of learning, so great thoughts for the propping up of a Government, would think upon John Aubrey? And since it is so, how can I express my thankfulness enough? I cannot do it to my mind, it is impossible, but I’ll tell you what I’ll do. ’Tis true I am no Oratour, but I will bring Compurgators to attest for me: the Bishop of Sarum, Mr. Wyld, Mr. Hooke, and this noble Baronet, all whom I mention for honours sake and upon the account of Friendship.’

‘Sir William,’ says Aubrey, ‘hath told me that he hath read but little, that is to say not since 25 Aetat, and is of Mr. Hobbes, his mind, that had he read much, as some men have, he had not known so much as he does, nor should have made such discoveries and improvements.’ Energy in action, according to his opinion, was the great requisite in life. There was ‘much boggy ground in this world;’⁸ but he was ready to fight all his enemies to the bitter end, whether on firm ground or the opposite, whether they were his ancient foes of the Sankey type, who under the ægis of Shaftesbury and Buckingham were showing a renewal of activity, or the representatives of the dispossessed Roman Catholic owners, who would gladly have involved him and Sankey in a common ruin. He spends the whole of 1676, 1677, and 1678 in Ireland, engaged in one continuous struggle, sometimes up, sometimes down, sometimes fighting his own battles, sometimes those of others. His buoyancy and pugnacity appear even in the hour of defeat. ‘Let me tell you,’ he writes to Southwell in 1676, ‘that even in this last storme, which has blown upon my concerns both in England and Ireland, I have (to shewe mine enemies that they cannot give me business enough) actually made and finished the chariot, which I was modelling in England.’⁹ Lady Petty is badly hurt in a carriage accident—it is to be hoped not in the chariot of Sir William’s designing. At one moment he is himself prevented crossing the sea by the fear

⁷ ‘Scit Genius, natale comes qui temperat astrum.’—Horace, *Ep.* II. 2, 187.

⁸ To Lady Petty, April 27, 1680.

⁹ Jan. 13, 1677.

of the Barbary corsairs, who, under the guidance of some renegade pilots from Liverpool, were making the navigation of the Channel dangerous ;¹ at another he is wrecked on his way to England, and narrowly escapes losing his portmanteau and all his business papers. In 1677 he is very ill, but mind triumphs over body ; and he grimly announces his wish that 'his friends and enemies should both alike know that he is in a much better condition to chastise the one and cherish the other than at any former period.' 'Tu ne cede malis, sed contra audentior ito' is his favourite quotation. He tells Aubrey that some men may accidentally have come into the way of preferment by lying at an inn and there contracting an acquaintance on the road ; but he proposes to be the architect of his own fortunes, and does not expect to get legacies in the future, having observed that he had got very few in the past, and that they had not been paid ; but he intends to claim his own.²

The struggle with the farmers of the revenue was continuing with unabated fury, exasperated by the attempt made by the Lord-Lieutenant in 1674, and probably suggested by Sir William, to carry out a proper survey for revenue purposes of the assessments for the hearth money. Sir William, through the combined influence of his own obstinate determination not to give way, and that of his enemies to ruin him, at last succeeded in getting into Chancery, both in England and Ireland, and was arrested and imprisoned for contempt of court. 'The two Chanceries,' he says, writing to Southwell, 'the one of England and the other of Ireland, are two sore blisters upon my affairs. My throat is also sore with crying for relief ; nor hath paying nor bleeding done me any good. I cannot continue the parallel between your fortune and mine in the Point of recovering Losses ; those who wrong you are in Irons and Chains, and those who abuse me have Rods of Iron

¹ To Lady Petty, April 27, 1680. On June 20, 1631, Baltimore had been plundered by Algerine corsairs, who were piloted by one Hacket, a native of Dungarvan. He was afterwards

taken and executed. The story is the subject of one of Davis's poems.

² *Bodleian Letters*, ii. pp. 486 and 487.

in their hands. However I am glad I have any fortunate friend, how much soever otherwise I am myself.' ³

The 'two Chanceries,' having once got Sir William into their clutches, showed no inclination to let go of him easily. He appears to have been partly indebted to his own want of caution for the trouble in which he found himself involved.⁴ 'This day,' he says, writing on February 10, 'about 11 o'clock, I and my Councile, one Mr Whitchett, were comitted Prisoners to a Serj^t-at-Armes by the Lord Chancellor,⁵ upon a very great mistake, as I think. The matter was this, viz. :— I drew up materials for a Bill to be preferred in Chancery against the farmers; and, as I used always to do, I gathered up all matters and motions which might have any affinity or relations to my intentions, expecting that my Councile would have made such alterations in matters and form, as might answer the practise of the Court. Whereupon he made a few notes up and downe my paper, as if he had thoroughly passed over it. But when I myself came to review it, I found he had not corrected some nonsense and other defects, which I myself had left in it—insomuch as I went to him, myself showed him his oversight, and desired him that he would take a special care of it, for that, although my matter was short, I would have it soe tempered by him as to give noe offence, nor spoile my business; telling him that I had several times suffered (as you know I have done), by oblique advantages which my adversaries have taken, upon some faults in the forme and cirkumstances, when they could not do it directly upon the matter. But hee having much business, let pass those two following points, viz. : I complained among other abuses the farmers had done me, that they (as I believed) had instigated my L^d Chancellor of England to speak sharply to mee; and that they stood laughing, whilst the dreadful grinding of your orator to the nether Millstone was denounced. And the point was this, that the farmers had given out That they would force your Orators plainest pretences at Common Law into Chancery; and that they had turned

³ To Southwell, Feb. 13, 1677.

⁴ Feb. 10, 1677.

⁵ The Lord Chancellor of Ireland.

the Chancellors of both Kingdoms against him. Upon the reading of these paragraphs, and having heard both Sir Whitehall and myself speake somewhat in explanation and excuse of the matter, he gave sentence as aforesaid : saying that he could easily pass over those reflections, which was in those words upon himselfe ; but not what concerned a principal Minister in England—meaning (as we all think) the L^d Chancellor.—Now see my misfortune : that I who had lately received an account out of England, how my L^d Chancellor there publicly expressed himself to this purpose, viz. : That though he had granted an Injunction against mee with some fâvour to the farmers, yet that he did not intend that by delays or other devises, the Justice of the Court should be discredited ; and therefore bidd them to dispatch their cause by Easter—upon which I was greatly pleased, and my thought of my Lord Chancellors former severity was quite banish't away. I say that my misfortune was that when I was well reconciled to my Lord Chancellor's proceeding, I should be thought to throw dirt in his face, whilst I was endeavouring to wipe off what I conceived to have been thrown against him by others. Now the mistake I think my Lord Chancellor was in, was that he punishes me for telling him that some others abused him, without even questioning those whom I accused for so doing. There be two or three points more, which I lett pass, for *I do not like to believe that persons in great place doe mistake so much as it seems to me they doe.* In brief, I am now a prisoner for having scandalized the L^d Chancellor of England ; whereas I verily believed I was doing the quite contrary, and at the time when his Lordship was as kind to me as I desired. All that I can accuse myself of, is that I took such a method as was not absolutely necessary ; but which way I scarce had proceeded. It is an easy matter to say “ *An asses ears are horses,* ” as mine are now esteemed. I presume you will hear this story with much flourish among mine enemies ; but in these two above mentioned points does lie the *Ratio formalis* of my suffering. . . . Deare Cousin, I am sure you will have some sympathy with me in these troubles, and I am sorry for it. I am in the right, and my adversaries are in the wrong : at least

I am soe happy as to think soe—and my mind is soe quiet, that when I have done my letters, I intend to make an end of translating the 104th Psalm into Latin verse, for which, amongst all others, Buchanan himselfe was most famous. I do not hope to reach the admirable purity of his Latin, but in some other points to come neare him.’⁶

Sir William’s imprisonment was of short duration. While it lasted this translation of the 104th Psalm was his great solace. The occupation was one for which he could at least plead the example of Clarendon, who during his first exile had consoled himself by writing ‘Contemplations and Reflections on the Psalms of David applied to the Troubles of this Time.’⁷ ‘The Chancellors of both Kingdoms,’ Sir William tells Southwell, speaking of this translation, ‘are the cause why it was done at all; and ye farmers why it was done noe better. I have sent it you, because I said “I have done it;” but desire you not to show it, at least not as mine, for I do not value myself by my Poetry, no more than by my discretion; but the pride I take is in the Love of Truth and of a very few Friends. But you will ask why I meddled with the Poem at all—to which I answer you that my mind was sick, and that I tost and travelled from place to place, to find rest; which when I had in vain sought from truth and reason, I fell to this poetry; and when I was vexed in considering ye wicked works of man, I refreshed myself in considering the wonderful works of God; and wrote about fifty of these same verses the same night I was committed, after I had written my post letters.’⁸ ‘Lord,’ he exclaims soon afterwards, unable to help smiling at the absurdity of the situation, ‘that a man 54 years old, should, after 36 years discontinuance, return to the making of verses, which boys of fifteen years old can correct, and then trouble Clerks of the Council and Secretaries of the Admiralty to read them.’⁹

‘I am not well,’ he writes to Southwell in the autumn of

⁶ To Southwell, Feb. 10, 1677.

⁸ To Southwell, March 10, 1677.

⁷ Lord Campbell’s *Lives of the Chancellors*, iv. 44, ed. 1868.

⁹ To Southwell, April 3, 1677.

1677, 'yet better in my mind than in my body. My legs swelling; my belly is not only big but hard; and my breath short; and methinks I see the same horse bridled and saddled for me that carried off your father. . . . My belly seems to myself a wooden belly.'¹ But he pulls through, and after a time is able to sit up at a table, and at once writes to Lady Petty to keep up her spirits. 'To let you see,' he continues, 'how waggish I am, I acquaint you that I had my picture drawn this week by Mr. P. Lely in a beard of 31 days growth, and in my owne hair without perewig, and in the simplest dress imaginable, without so much as a Band, and so as the picture is like myself, if I had never stirr'd from Romsey. . . .'² I would not have you troubled at the apprehensions I take of my owne growing infirmities. I feele nothing serious, but severall things which require my care. I'll assure you my whole study is to make things cleare, and to naile loose things fast, for you and my children; and hope there are some about me (who should be your friends), that will prevent impostures from Rooks and strangers. As for others I am not solicitous. The first piece of my new care for my owne health is the fitting our garden for my exercise and diversion. The walks will be 1,000 ft. about, planted with the best walled fruit that Ireland affords. The stone and Brick wall will be $\frac{1}{5}$ part of a mile, the House you sufficiently know is very meane, but 300*l*. will make an apartment which will serve you for a shift, for I am not furiously bent to the building of a great house, till I see a change in my affairs; altho' I do elude my melancholy sometimes by contriving many noble places upon paper. . . .'³

In 1677, the vicissitudes of English politics having led to the restoration of Ormonde to the Lord-Lieutenancy of Ireland, Sir William saw the prospect brighten before him. There were still, however, difficulties and delays. 'My Lord

¹ Sept. 27, Nov. 10, 1677.

² This picture is now the property of Mr. Charles Monck, of Coley Park, Reading. In the original picture Sir William was represented holding a skull in his hand, but the skull has

been painted out. It may also be mentioned in connection with the above letter, that the word 'beard' was frequently used at the time for any hair on the lips and chin.

³ Oct. 6, 1677.

Lieutenant upon your, and my lady as I think upon my own interest,' he wrote to Southwell, 'I believe would be glad I had some reasonable relieve; but my Lord dreads either the trouble or the danger of doing it, (though I think nothing of either in the case) for when he has gone about it, there come the Chief Judges of each Bench and the King's whole learned counsel, all armed with prongs and pitchforks. They all agree in a deep sense of my sufferings; but breake up in irresolution and in some oblique expediente, without any direct remedy, soe as nothing is yett done.'⁴ The exorbitant quit-rent on his estate was, however, reduced; a judgment entered against the farmers, and his principal antagonist among them, one Sheridan, replaced by a friend, Dr. Robert Wood. In the same year he was appointed Judge of the Court of Admiralty, a post which, amongst other reasons, he was glad to occupy, because it relieved him of the onerous duty of serving the office of Sheriff, a post which, from his ownership of land in more counties than one, he was constantly liable to being called upon to accept.⁵

The peace with the farmers, however, proved but a truce. Fresh quarrels soon arose, for the farmers appear to have resisted the execution of judgment in his favour by an appeal to the intervention of the King. Even in England it had not been unusual before the Civil War to stay legal proceedings by the issue of a writ *rege inconsulto*, which practically asserted the right of the King to interfere in private causes.⁶ One of the most discreditable chapters in the career of Bacon is that of his efforts to maintain this practice, which like other abuses lingered on in Ireland when it had ceased to exist in England. 'I say nothing now,' Sir William writes to Southwell in May 1677, 'of Poems and Scales of Creatures; you see now what these Farmers are; how they abuse the Chancellors of both kingdoms; how they fly to prerogative for protection. They have done all that knaves and fools, and that sharks and beggars could devise to do; all is nought. The

⁴ To Southwell, June 10, 1677.

⁵ To Mr. Herbert, Aug. 1, 1676.

⁶ See Campbell, *Lives of the Chan-*

cellors, ed. 1868; *Life of Bacon*, ch. iii. p. 73.

delay of indulgence which I have suffered, will endanger my whole.' ⁷

He goes on to tell Southwell that he sees no chance of any redress: nought indeed save 'promises and vapours;' but he is determined to continue the fight 'in the hope of the resurrection of slain truth, like the seven sons in the *Maccabees*.' ⁸ Southwell, in a letter full of sympathy and good sense, advised a little prudence and moderation under the circumstances. 'You may imagine,' he writes, 'whether it be not a grief to me, to see you involved in the anguish and depredation of the law, beginning the year with one complaint and ending it with twenty; running in consequence the hazard of your life or the ruin of your wife and children by the life of others. Nor can I foresee a period of such calamities, till you resolve absolutely on other measures than what you have taken. But if "Right be Immortall," yet you have not a Corporation of lives to assert it, in all that variety of channels and courses wherein it runs. And there are some wrongs whose scourge must be remitted to God Almighty alone; and therefore if even soe dear a thing as the Right Eye be offended, pluck it out; and enter maimed into the smooth things and Peace of this Life, which is next door to the Joys of another. And suffer from me this expostulation, who wish you prosperity as much as any man living; and having opportunities to see and hear what the temper of the world is towards you, I cannot but wish you well in Port, or rather upon the firm land, and to have very little or nothing at all left to the mercy and goodwill of others. For there is generally imbibed such an opinion and dread of your superiority and reach over other men in the wayes of dealing, that they hate what they feare, and find wayes to make him feare that is fear'd. I do the more freely open my soul to you in the matter, because I see 'tis not for the vitalls that you contend, but for outward limbs and accessories, without which you can subsist with plenty and honor; and therefore to throw what you have quite away, or at least to put it in daily hazard, only to make it a little more than it is, is what you would condemn a thousand times over

⁷ May 10, 1677.

⁸ Aug. 22, 1677.

in another; and you would not think the reply sufficient, that there was plain right in the cause and justice of their side; for iniquities will abound and the world will never be reformed. After all this, I mean not that you should relinquish the pursuite of your £2,500, which is money out of your Pockett, and for which you are a debtor unto your family. But for other pretensions, lett them goe, for Heaven's sake; as you would a hot coale out of your hand; and strive to retire to your home in this place, where you had the respect of all, and as much quiet as could be in this life, before your meddling with that pernicious businesse of the Farme; but you may reckon it as a Storme wherein you were seized, and if it has obliged you to throw overboard some rich Bales, 'tis but the common case, and what others doe for the safety of the rest.' He concludes by telling his friend to believe in his unaltered affection, even if he writes unpalatable truths; and that he 'will store him in an ebony cabinet, wherein,' he says, 'I keep, as in an archive, all the effects of your pen, for I look on them as materials fit for those that I would take most care of; and hope they will hand them over with like estimation.'⁹

Sir William seems for the moment to have accepted Sir Robert's kindly advice. He replies to his friend with a growl, that he is reserving a place for the farmers in the 'Scale of Creatures,' which part, whenever it appears, will be entitled 'the Scale of Devils;' and he acknowledges that patience is at the moment comparatively easy, as, a final decision releasing the old quit-rents having at length been given in his favour, 'praise be to God, he had more ready money than his friend had ever known him to have, and yet not more than half of what he had nominally received, so much water had the Devil and his instruments put beside the mill.'¹

He was now contemplating a visit to England, having been three years continuously in Ireland; but he was not able to start till quite the end of 1679. Shortly after arriving in London he became the object of the attacks of Colonel Vernon,² a dis-

⁹ Sept. 15, 1677. ¹ Nov. 10, 1677. and he may have had some old quarrel

² The name of a Colonel Vernon with Sir William Petty in connection appears in the 'History of the Survey,' with it.

contented officer, and one of the professional bravoës of the day, who had just before been directing their violence against the persons of those who were obnoxious to their employers. The attacks of Colonel Blood on the Duke of Ormonde and of Sir John Sandys on Sir William Coventry were still fresh in the public mind. Vernon appears to have been a shabby imitation of Blood, if not actually one of the satellites of that notorious adventurer, who, for occult reasons, was shielded at Court and enjoyed a dangerous impunity.

Vernon now commenced a series of insulting attacks against Sir William, who, exasperated at length by repeated provocation, and by the advice of those 'who pretended to understand the punctilio of such affairs,' determined to resent the affronts which this Alsatian knight continued to put upon him in London. He struck the Colonel in the street with a cudgel, and, drawing his own sword, desired him to draw also. The Colonel, however, who seems to have been as cowardly as he was insolent, took refuge 'in the Blue Posts Ordinary;' and, having bolted the doors, appeared at the upper windows and at that safe distance addressed the by-standers, accusing Sir William of cowardice. Then Vernon sent one East with a challenge, which Sir William accepted, and a day was fixed for a duel; but when the time arrived, the Colonel was nowhere to be found. In the events which followed, the Duke of Monmouth appears upon the scene on behalf of the Court, and sends for both Sir William and Colonel Vernon, with a view to reconciling the parties. Colonel Vernon, however, declines his advice, and files an information in the King's Bench against Sir William; and Sir William is fined 200*l.* and costs. But before the time is over, Vernon, East, and their servants, violently assault Lady Petty's relative, Mr. James Waller, and a friend, Mr. Hughes, and East gets badly wounded in the encounter. Waller thereupon files an information against East; and the Colonel and his accomplice are on the point of being convicted, when the Crown enters a *nolle prosequi*. Then Sir William brings an action against Vernon for slander, but before the trial comes on, Vernon, accompanied by his brother, runs the pike of his cane into Sir William's left eye, 'who saw him not.' Then Sir

William draws his sword and Vernon decamps, but hearing Sir William is still breathing vengeance, applies to the King's Bench for personal protection, and Sir William appears ultimately to have been forced to give securities that he would keep the peace, 'and neither prosecute the bastinado nor the suit.'

And thus did this affair, which so strangely illustrates the manners of the period, at length terminate.³

³ 'The State of Matters between Sir William Petty and Colonel Vernon.' Petty MSS.

CHAPTER VII

POLITICAL ARITHMETIC

Captain Graunt—Sir William Davenant—Principal works—Hobbes—The ‘Book of Rates’—France and Holland—‘Treatise on Taxes’—Proposals for reform—The prohibitory system—The origin of value—The mercantile system—Difficulties of reform—The Navigation Acts—Customs duties—Excise—The par of value—Usury laws—Rent—Views on population—Growth of London—The division of labour—Supply and demand—The ‘Essays’—France and Holland—The example of Holland—The greatness of England.

FROM Aubrey’s friendly pen we get a sketch of Sir William at about this period of his life. ‘He is a proper handsome man,’ the antiquarian writes; ‘measures six foot high, good head of brown hair, moderately turning up—vide his picture as Dr. of Physick. His eyes are a kind of goose grey, but very short sighted, and as to aspect, beautiful, and promise sweetness of nature; and they do not deceive, for he is a marvellous good natured person, and εὐσπλαγχνος. Eyebrows thick, dark and straight (horizontal). His head is very large, μακροκεφαλός. He was in his youth slender; but, since these twenty years and more past, he grew very plump, so that now (1680) he is abdomine tardus. This last March 1679–80 I persuaded him to sit for his picture to Mr. Logan the graver, whom I forthwith went for myself; and he drew it just before his going into Ireland, and ’tis very like him.¹ But about 1659, he had a picture in miniature drawne by his friend and mine, Mr. Samuel Cowper (prince of limners of his age), one of the likest that ever he drew. He is a person of admirable inventive head and practicall parts.’

It has been seen that in the letter to Lord Anglesea, written

¹ *Bodleian Letters*, ii. 487. This is probably the picture which is engraved on the frontispiece of the map of Ire-

land, and is mentioned by Walpole in his *Anecdotes of Painters*. See Larcom, *Down Survey*, note p. 347.

in 1672, Sir William described himself as directing these gifts to the preparation of a work on 'Political Arithmetick,' in the intervals of the lawsuits with the farmers of the revenue, which in a list of his writings are grimly set down in one particular year of specially evil memory, 1667, as the sole proofs of authorship he could produce.² Already at a very early period of his career he had given attention to the collection and examination of statistics, and had earned thereby the goodwill and support of Captain Graunt. Graunt was by occupation a clothier, but, like many others, had taken to soldiering during the Civil War, and was a captain and major of the City train bands. His good sense and probity caused him to be elected to the Common Council, and to be frequently named arbitrator in trade disputes. He had for some time been collecting materials for his 'Observations on the Bills of Mortality of the City of London,' which appeared in 1661, and is the first work of the kind published in the English language. It was generally believed at the time that Graunt had received material assistance from Petty, and that he was to be regarded as the literary patron rather than as the real author. Bishop Burnet and Evelyn were both of this opinion,³ which the numerous parallelisms between the 'Bills' and Sir William's own work, the 'Treatise on Taxes,' go far to support, different though the two books are in style and in some of the views expressed. On the other hand, it is difficult to understand why Sir William in this particular case should have sheltered himself under the name of a friend, instead of publishing the book anonymously, as he did several of his works. Whatever the explanation may be, a reasonable view probably is that it was a true instance of joint authorship. That Sir William had some hand in it can hardly be doubted, owing to the frequent mention of Ireland, which is so characteristic of all his works, and the wealth of medical illustration, which Graunt could hardly have supplied himself. This

² The references to Sir W. Petty's Works throughout this chapter are to the volume published at Dublin in 1769, entitled *The Petty Tracts*.

³ Burnet, *History of his own Times*, i. 423; Wood's *Athenæ*, iv. 218; Evelyn, *Diary*, ii. 97; *Bodleian Letters*, ii. 488.

little book—it occupies barely 100 pages—was the first serious attempt to classify vital statistics and define the limits of a science respecting them.⁴ It met with an extraordinary success, and at the Restoration the King ordered Graunt's name to be enrolled amongst the members of the Royal Society, adding that, if there were any more such tradesmen in his City of London, he desired they also should be enrolled immediately. In France Colbert is believed to have been encouraged by it to provide for the first regular register of births and deaths.⁵

Towards the end of his career, Sir William wrote some 'Observations on the Dublin Bills of Mortality' ⁶ in imitation of those which Graunt had published many years before. The publisher protested against the brevity of the manuscript sent him, which in size hardly exceeded a pamphlet. At his request Sir William added a postscript, but wrote at the same time: 'Whereas you complain that these observations make no sufficient bulk, I could assure you that I wish the bulk of all books were less.'⁷ 'The observations upon the London Bills of Mortality,' the book opens by saying, 'have been a new light to the world, and the like observations upon those of Dublin may serve as snuffers to make the same candle burn clearer.'⁸ The collection of statistics naturally led Petty and Graunt to attempt to deduce some general laws from them, and thus the whole field of public economy, or, as Sir William Petty generally termed it, 'political arithmetick,' was opened up to their investigations.⁹

Observation, it has been said, is the one eye of political economy, and comparison the other.¹ Sir William was one of the first to grasp the fact, and was singularly successful in seeing through both eyes if, at least, he is to be judged by the knowledge of the times—in such a case the only legitimate standard of comparison. Political economy, in the modern

⁴ See the dissertation by Mr. W. L. Bevan referred to in the Preface, pp. 20-22.

⁵ See article 'Graunt,' in Chalmers' *Biographical Dictionary*.

⁶ In 1683.

⁷ *Several Essays*, p. 145 bis.

⁸ *Ibid.* p. 131.

⁹ The expression 'political economies' occurs in ch. ix. p. 344 of the *Political Anatomy of Ireland*.

¹ Röscher, p. 70.

acceptation of that term, may be seen just beginning to struggle into a bare existence as a separate branch of science in the pages of the writers of the earlier part of the seventeenth century. Economics, in the sense in which they were understood by the authors of antiquity, were concerned with those practical questions only which affected the finances of the State. In the Middle Ages even such limited inquiries could hardly find a natural place in a society which, outside the limits of the towns, was almost entirely based on the idea of personal service. Meanwhile political philosophy had chiefly busied itself with speculations whether man by nature was or was not a social being, but little or no connection was established between these speculations and the sphere of economics.²

When at length, after the long political and religious struggles of the sixteenth century, States in their modern form had arisen, and the trading and commercial classes of society became a political factor in every country, the inquiries of the old economics as to what taxes a Government might properly raise naturally revived, and political philosophy lived again in the works of Bodin and Grotius. But the two sisters still stood apart, and political economy cannot be said to have existed till Hobbes proclaimed the doctrine that political philosophy was concerned with certain general questions, on which 'the nutrition and pro-creation of a commonwealth'³ depended in practice, as well as with the questions on the border-land of metaphysics and moral philosophy. Scattered up and down the pages of both the 'Leviathan' and the 'De Cive' are discussions which not only touch on a number of social questions, but contain occasional attempts to define terms, such as value and price, and to analyse the origin of wealth,⁴ as well as the usual practical considerations as to the taxes which ought to be imposed as a matter of immediate

² See Bonar, *Philosophy and Political Economy*, Book II. chaps. iii. and iv.

³ '*De Civitatis facultate nutritiva et generativa*,' *Leviathan*, Part II.

ch. xxiv.

⁴ See, for example, *Leviathan*, ch. xxv., as to 'price;' and, as to 'wealth,' the *De Cive*, pp. 221, 222.

convenience to the law-giver and the State, or are right from a purely ethical point of view. The 'Oceana' of Harrington, published in 1658, further proclaimed the opinion that the distribution of property determines the nature of government, and that the political philosopher is therefore concerned with the distribution of property.

Petty, as already seen, had been the pupil of Hobbes and the ally of Harrington in his club; and it was to Harrington that the popular belief attributed the original idea of the settlement of Ireland in which Petty had just played so conspicuous a part. Thus all the influences most likely to affect him, those of his own pursuits and of his social surroundings, combined to attract him to the examination of those questions which the final break-up of the old order of things founded on the ideas of the feudal system, and the rising influence of the trading and commercial classes, imperatively indicated as requiring an answer on something better than a merely empirical basis. As Petty possessed the mathematical faculty in a marked degree, his natural impulse was to attempt to apply mathematical methods and arguments drawn from figures to the elucidation of economic questions; though whether he was the inventor of the term 'political arithmetick' may be doubted: it was probably already a current term. Thus in his hands political economy was to be mainly an inductive science.

'By political arithmetick,' says Sir William Davenant, 'we mean the art of reasoning by figures upon things relating to government. The art itself is undoubtedly very ancient, but the application of it to the particular objects of trade and revenue is what Sir William Petty first began. . . . He first gave it that name, and brought it into rules and methods. At the time,' Davenant proceeds, 'the very foundation of the art, viz. reliable statistics, and more especially a competent knowledge of the numbers of the people, was wanting.' Sir William, therefore, in all his inquiries 'had to take the figures of the customs, excise, and hearth money as his guides, and to reason from them, trying to compute the number of the people from the consumption of the nation as evidenced by

the receipts; 'to 'guess at our strength and wealth by the general stock employed in trade; 'and to compute the population by the returns of the number of houses paying the tax.⁵ But even these data were very imperfect; for example, the farmers of the excise were never obliged to render a real account of their receipts prior to 1674, nor was there any correct return of the gross produce of the hearth money prior to 1679.

The study of the bills of mortality of the City of London, which comprised 134 parishes in Middlesex and Surrey, probably furnished him with his most valuable data; but it is obvious that the difficulties with which he had to contend from the insufficiency of his materials could not fail greatly to impede the accuracy of his conclusions; and Davenant goes on to regret that the 'excellent wit' and 'skilful hand' of the author had not survived till a later date, when the fuller information which had accumulated under the variety of taxes that had been lately levied in the kingdom would have been at his command for purposes of comparison.⁶

Of the method of these calculations, admittedly founded on insufficient data, his views in regard to the amount of the population of London may be given as an example. He starts from the number of houses prior to the Plague and Fire, which appear by the register to have been 105,315; he then estimates that one-tenth of the houses held two families, the remaining nine-tenths only one; he takes the average number of persons to a family at ten in the wealthier, five in the poorer, eight in the middle class. He then checks his calculation in two ways: by multiplying the annual death rate by thirty, and by taking the number of deaths in the Great Plague—estimated at one-fifth of the total population; and then calculates the natural rate of increase subsequently. The three methods produce results approximating to the same result: the first, 695,076; the second, 690,360; the third, 653,000.⁷ His calculation of the stock of Ireland he bases on

⁵ Davenant, *Political Arithmetick*; *Works*, i. 128, 129.

⁶ *Ibid.* i. 128, 129.

⁷ *Several Essays*, i. 'Of the Growth of the City of London,' pp. 100-110.

the area of the pasture land of the country, 'supposing them to be competently well stocked,' and he 'guesses' that one-third of the small occupiers have one horse, and 'supposes' that 16,000 wealthier families have 40,000, and so on. He is of opinion that, because the export of Irish butter and cattle in 1664 had increased one-third since 1641, the population had increased one-third since the latter date also.⁸ He calculates that the population doubles itself in 40 years, and that the present population of London being about 670,000, the population of the 133 parishes would in 1840 be 10,718,880, almost equal to the population of the whole of the rest of the country, a result which he thinks impossible; and he anticipates that the highest point in population will be reached about 1800, and that afterwards there will be a falling-off.⁹ Such calculations are manifestly hazardous, and based on very imperfect premises; but they were the best of which the existing materials admitted. Nor was anyone better aware of their defective character than the author himself. 'Curious dissections,' he says, 'cannot be made without variety of proper instruments, whereas I have had only a common knife and a clout, instead of the many more helps which such a work requires;' ¹ and his works contain constant and oft-repeated pleas for the collection of more accurate information, and for the intervention of the State, especially in regard to a correct enumeration of the people, statistics of trade, and a register of lands and houses: until then everything will be 'by hit rather than by wit, and all calculations merely conjectural.'²

Of Sir William's contributions to the infant science five have achieved a permanent reputation: the 'Treatise on Taxes and Contributions,' published in 1662; the 'Discourse on Political Arithmetick,' written in 1671, but not published till 1691; and a tract entitled 'Quantulumcumque concerning

⁸ *Political Anatomy of Ireland*, ch. iv. 312; ch. viii. p. 338; ch. ix. p. 362.

⁹ *Several Essays*, 'Of the Growth of the City of London,' p. 107.

¹ *Political Anatomy*, Author's Preface, p. 289.

² *Treatise on Taxes*, ch. v. p. 40.; *Essays*, p. 119.

Money,' dealing with questions of currency, and written in 1682; a tract entitled 'Verbum Sapienti,' written in the last year of the first Dutch war, in 1665; and the 'Political Anatomy of Ireland,' published anonymously in 1672. To these may be added the two series of detached Essays on political arithmetic written at various times between 1671 and 1687. All these works are essentially practical in character, and have for their primary object the introduction of improvements in government and administration. They are largely inductive in method; a certain number of facts being as a rule first noted, and then followed by an attempt to found some general proposition upon them, and to apply that proposition to the circumstances of the time, by the selection of apposite illustrations, showing either the advantage of adopting it or the injury of neglecting it in practice. On the other hand, there are frequent instances of purely deductive reasoning; *e.g.*, the whole speculation on the par of land and labour, to be noticed further on, is a piece of purely deductive reasoning from hypothetical premises.³

The influence of Hobbes on the early development of Sir William Petty's mind has already been traced. The 'Treatise on Taxes' shows the maintenance of that influence. The great problem of government, which in a confused manner all the statesmen of Europe in the seventeenth century were engaged in trying to solve, lay chiefly in the question what the shape should be in which the final transition was to take place from the still surviving mediæval forms of civil administration to others more suited to the needs of the time. On one side were the evils of the confusion caused by a mass of ancient local customs and exclusive privileges, with maladministration and weakness at head-quarters. On the other lay the dangers of extreme centralisation, and, as in France, of the consequent loss of civil and political liberty. The taxes to be raised, the methods of raising them, the mode of collection, and their receipt when collected, were all equally cumbrous and anti-

³ A list of Sir William Petty's works will be found in the Appendix, taken from a paper left by him.

quoted. They required not so much remodelling, as to be placed on an entirely new footing. The finances of every Crown in Europe still bore the character of the budget of a feudal superior, and were struggling to get free from the restraints of that system—if system it could be called.⁴ In all these matters centralisation was as much the necessity of those times, in order that the State should live, as a decentralisation is the need of the present day. Different minds, according as they were constituted, saw—some the dangers of the existing disorder, others the perils of change, more clearly. Ministers like Strafford and Richelieu only recognised in ancient customs the shield of innumerable abuses, and a fixed obstacle to the material development of their country at home and to a consistent foreign policy abroad. In England the privileges of the aristocracy and corporate towns fortunately found defenders capable of comprehending that, in order to survive, they must prove themselves something more than the bulwarks of a dead past, and that a reformed and properly organised central administration was necessary for the benefit of the nation as a whole.

Notwithstanding his undoubted leaning to the monarchical element of the Constitution, Hobbes is not to be identified with the vulgar adherents of mere personal absolutism. The enemy he combated was the notion of any shape of *imperium in imperio*, whether lay or ecclesiastical, which could stand in the way of the legitimate development of the State. Following up the ideas which Bodin was the first to enunciate clearly, he defended the cause of a strong and powerful administration on determinate lines, able to assert itself against privilege within and foreign attack and intrigue without. He may be regarded as the founder of the doctrine of the ultimate

⁴ 'En 1614, une dernière Assemblée des Etats se prépare à examiner, une fois encore, le problème posé depuis des siècles. Qui va l'emporter? Sera-ce la tradition médiévale avec ses principes aristocratiques, ses engagements étroits, ses entraves apportées à l'unité? Ou bien sera-ce l'Etat

moderne, conçu selon les exemples romains, avec ses exigences souvent mal justifiées, avec ses procédés arbitraires, et sa revendication incessante et souvent abusive de la maxime antique: "Salus populi suprema lex"? ' *Histoire du Cardinal de Richelieu*, par Gabriel Hanoteau, tome i. p. 352.

sovereignty of the State, and therefore, however little he may have intended or foreseen it, of the sovereignty of Parliament as the final depositary of the power of the State in England. More indirectly, he was the father of the school of political thought which came on the Continent to be known as that of *doctrinaire* or authoritative liberalism, as distinct from democracy pure and simple, which has always had a tendency to break up into local anarchy. What Hobbes laid down in theory, Petty sought to apply in practice. The 'Treatise on Taxes' is continually occupied with the wide sphere of the proper powers of the State; with the benefits which an enlightened administration can confer on all its subjects both by removing the disabilities which shackle and impair their energies, and also by the positive development of the resources of the country through a thorough reform of the system of taxation; and by the activity of the State being extended into many as yet neglected directions, including that of education, including naval and commercial knowledge. Petty's own connection with Ireland tended to develop the natural tendencies of his mind. He evidently saw in it, like Cromwell, 'a clean paper' for experiments in government which in England might be impossible owing to the accumulated weight of historical prejudice and the power of vested interests,⁵ especially as his own estimate of the capacities of the native population, if given a fair opportunity, was high. It was this order of ideas which made him the natural enemy of the great Irish nobles of the Rebellion, and also of the existence of separate Parliaments and of all ecclesiastical privileges. Improved communications both in England and Ireland, and between them, was one of the principal weapons he relied on to attain his objects. He wished 'every year to make 50 miles of new navigable river in the most advantageous places,' and that 'there might not be a step of bad way upon all the great nine roads to London,'⁶ and then it would cease to be said that 'the English in Ireland growing poor and discontented degenerate into Irish; and, *vice versâ*,

⁵ Ludlow's *Memoirs*, i. 246.

be done,' 1685. Nelligan MS., British

⁶ 'An Opinion of what is possible to Museum.

Irish growing into wealth and favour would reconcile to the English.' ⁷

The 'Treatise on Taxes' was immediately occasioned by the changes discussed after the Restoration in the laws relating to the revenue, both in the method of assessing the older taxes, and by the imposition of new burdens in lieu of the feudal duties on land then finally abolished: changes marking the transition from the system of direct to that of the indirect taxation which existed almost unimpaired till the days of Sir Robert Peel. A new 'Book of Rates,' or table of duties, with a revised code of customs law, was adopted under the name of 'the Great Statute;' an excise on wines and liquors was granted to the Crown, in lieu of the abolished feudal duties; and 'hearth money,' an unpopular tax copied from a French original, was imposed on all houses, except cottages, according to the number of stoves or grates. 'There is much clamour against the chimney money,' says Pepys in June, 1662. A few years later, in order to meet the expenses of the first Dutch war and the costs of the expected struggle with France, the poll tax, together with the old Tudor subsidies and the Commonwealth monthly assessments, were revived, to serve as a rude method of making all sources of property contribute to the revenue. At the same time the import and export of a long list of 'enumerated' articles was absolutely prohibited, and the Act of Navigation, which practically limited trade with England to goods carried in English bottoms—an inheritance from the Cromwellian period—was renewed, with a few modifications.⁸ At a date slightly later than the appearance of the treatise, viz., in 1668, 1670 and 1676, the duties on brandies and wines were raised, in order to protect the home manufacturer, and to retaliate on France for the prohibition of the import into that country of many articles the produce of England.⁹ These statutes mark the beginning of the long

⁷ *Political Anatomy of Ireland*, ch. 32; 15 Charles II. c. 7 and 15 xiii. p. 375.

⁸ 12 Charles II. c. 18, and the statutes 14 Charles II. c. 5, 7, 18,

⁹ See Dowell's *History of Taxation* for the details, iv. 119, 162.

war of tariffs, which became accentuated after the Revolution of 1688, and continued till the middle of the present century.

In France a new tariff, from the adoption of which an epoch in the commercial history of Europe is to be dated, had been promulgated at the advice of Colbert, and the question debated in England was whether the main principles on which that tariff was founded were sound and to be imitated, or the reverse. Political leanings influenced personal judgments as much, perhaps, as any abstract views on the relative advantages and disadvantages of different systems of taxation, according as the sympathies of individuals favoured either the French or the Dutch alliance. The object of Colbert's tariff was by means of reduced duties on raw materials to encourage the manufacture and export of French goods, and to discourage the import of foreign manufactured articles by the imposition of heavy duties on their entry. The export of French corn was at the same time prohibited, under the mistaken idea that food would be thereby cheapened, and French manufactures be stimulated by increasing the purchasing power of money. The actual result was to reduce the production of French corn to the amount required for home consumption, without materially lowering the price. Underlying the whole of this complicated scheme was the idea that France would be more enriched by disposing of the surplus of her manufactured goods abroad for money, than through becoming 'tributary,' as the phrase went, to foreign countries, and sending abroad, in exchange for foreign manufactured goods, the agricultural produce of her soil, which, according to the views of the supporters of the system, ought to be consumed at home. Another and a sounder part of the system was the improvement of the means of internal communication by road and by water, the abolition of monopolies and exemptions, and the removal of the artificial barriers—so far as popular prejudice permitted—by which the unwisdom of man had aggravated the difficulties created by nature.

The mercantile portion of Colbert's policy reposed partly on the error that value—in other words, wealth—consisted in the precious metals coming into a country as the result of

foreign trade, and that to increase the former was to add to the latter; partly in the idea that the profit on the export of home manufactures, fostered by protective duties and stimulated by bounties, was greater than that gained by the export of the agricultural products—the corn and wine and wool—which Colbert's predecessor, Sully, had recognised as the sources of the wealth and prosperity of France. These premises once conceded, the soundness of the system followed as a matter of course. It was the policy of a nation of landowners which had been seized with a desire to become at all hazards a nation of manufacturers and merchants.

Of an exactly opposite character was the example of Holland, whose prosperity it was the desire of France to destroy. That country, as observed by Adam Smith in the following century, had approached the nearest to the character of a free port of all European countries.¹ Holland still held the greater part of the carrying trade of the world. Colbert hoped to crush it by hostile duties; Louvois and his royal master by open war. The Dutch tariff imposed no protective duties at all, and the State gathered the necessary revenue from the home consumer by a wide-reaching system of indirect taxation on commodities. It was the policy of a nation of merchants and bankers who understood the interests of their class.

'Holland,' to use the words of a recent author, 'was intrinsically a poor country. But, notwithstanding, in nearly all commodities Holland gave the price, and it did so because her towns had a good market, to which all the world resorted. The Dutch were manufacturers; in some articles the successful manufacturing rivals of England; but their principal source of wealth, of that wealth, abundance of good products, on which alone the capacity for any other industry can be based, was to be traced to trade and the policy of free trade.'²

Such were the two rival systems of the Continent, between

¹ Adam Smith, *Wealth of Nations*, pp. 192, 420.
ii. 350. See, too, Thorold Rogers,

² Thorold Rogers, *Industrial and Commercial History*, p. 192.

which, in the latter half of the last century, England was being called upon to choose in the settlement of her future financial and commercial system. Sir William, in his early days, had travelled in Holland. He had evidently even then been attracted by the example of Dutch trade and finance, and as early as 1644 he had written a tract called the 'Frugalities of Holland,' which, however, was lost at sea.³ In the 'Treatise on Taxes,' with an eye still fixed in the same direction, he begins by pointing out that the only legitimate public charges of a State are, its defence by land and sea so as to secure peace at home and abroad and honourable vindication from injury by foreign nations; the maintenance of the chief of the State in becoming splendour, and of the administration, in all its branches, in a state of efficiency; 'the pastorage of souls by salaried ministers of religion;' the charge of schools and universities, the endowment of which, in his opinion, ought to be a concern of the State, and the distribution of whose emoluments ought not to be 'according to the fond conceits of parents and friends,' and of which one of the principal aims should be the discovery of Nature in all its operations; 'the maintenance of orphans, the aged, and the impotent,' for, in his opinion, 'the poor can lay up nothing against the time of their impotency and want of work, when we think it is just to limit the wages of the poor;' and the improvement of roads, navigable rivers, bridges, harbours, and the means of communication, and the development of mines and collieries.⁴

He then considers the causes which increase and aggravate the public charges and render them unpopular. These he analyses under six heads: (1) The distrust of the people in the honesty of the administration which collects and spends the taxes; (2) their compulsory payment in money and the want of a proper banking system; (3) obscurities and doubts concerning the right of imposing; (4) scarcity of money and confusion of coins; (5) the fewness of the people; (6) the absence of accurate statistics and of proper valuation lists.

³ See list of Sir William Petty's writings in the Appendix.

⁴ *Treatise on Taxes*, ch. i. pp. 1-4.

To these he adds the fear of wars, aggressive, defensive, and civil: the first of which he traces to mistaken notions of national greatness; the second to want of adequate preparation, 'wherefore to be always in a position of war at home, is the cheapest way to keep off war from abroad;' and the third largely to the persecution of the heterodox in religion. In connection with these 'aggravations' he proposes a large redistribution of the revenues of the Church, and suggests a return to a celibate clergy, and the abolition of the mass of unnecessary officials, lawyers, doctors, and professional men, who make unnecessary business or fatten in idleness at the expense of the taxpayer. 'If registers,' he says, 'were kept of all men's estates in lands, and of all the conveyances and engagements upon them; and withall, if publick loan banks, lombards, or banks of credit upon deposited money, plate, jewels, cloth, wool, silk, leather, linen, metals and other durable commodities were erected,' he cannot but 'apprehend how there could be above one tenth part of the law suits and writings, as now there are.'⁵ He desires that the State should find work for the unemployed. 'The permitting of any to beg,' he says, 'is a more chargeable way of maintaining them whom the law of nature will not suffer to starve, when food may possibly be had.'⁶ He contemplates a large system of public works, especially in connection with his favourite object, the improved communications by road of the different parts of the country. The 'supernumeraries' of the State, as he terms them, should 'neither be starved, nor hanged, nor given away.' That they will either beg, or starve, or steal, is certain, and there are grave objections to each and all of these three courses. It would even be better 'to let them build a useless pyramid on Salisbury plain, or bring the stones at Stonehenge to Tower hill,' than leave them in absolute idleness.⁷

He then passes to the discussion of taxation, or, in other words, what the public charges ought to be in a well-regulated State, and suggests that one-twenty-fifth part of the value

⁵ *Treatise on Taxes*, ch. ii. p. 11.

⁶ *Ibid.* ch. i. pp. 14-16.

⁷ *Ibid.* ch. ii. p. 16.

of land and labour is the share, or '*excisum*,' which ought to be sufficient for public uses. In the tract entitled '*Verbum Sapienti*,' published during the Dutch war—when the burden of taxation had become intolerable, and was doubly odious from the want of success attending the operations at sea—he puts the monthly charge on landed estate of the taxes at 70,000*l.* a month, or 840,000*l.* a year; and hints at the probability of this charge rising to 250,000*l.* a month. He calculates that it amounts to one-third of the annual value; but that, if the charge were laid in a just proportion and on a proper basis, the charge would only be one-tenth. He considered, for example, that the City of London paid about half the proper contribution, 'because the housing of London belonged to the Church, the companies, or gentlemen, and is taxed by the citizens, their tenants.'

The expenses of the State he puts at one million, including war expenses. To meet this he estimated the 'ordinary' or ancient Revenue of the Crown as follows :

	£
Crown Lands	70,000
Post Office	20,000
Coinage and pre-emption of tin	12,000
Forests	4,000
Courts of Justice	6,000
First-fruits	18,000
	<hr/>
	180,000
And the Customs at 2 per cent.	170,000
	<hr/>
	300,000

The above amounts do not include the duties on 'wares, wine, licenses, butlerage, excise, chimney money, the land tax, the poll tax, and the monthly assessment,' levied in order to make up the balance. These taxes he proposed to levy in the proportion of three-eighths on land and houses and the value of stock-in-trade, and five-eighths on consumption, believing that this distribution of burdens represented the true proportion of the value of the former to that of wages, and that it was fair to distribute taxes in proportion. The sum of 375,000*l.* he proposed to place on land and on stock-in-trade; and 625,000*l.*

on the people by a poll tax of 6*d.* a head, and an 'excise of 19*d.*, or one eighty-fourth of the value of consumptions.'⁸

He insists in this tract, and at still greater length in the 'Treatise on Taxes' and the 'Political Arithmetick,' on the necessity of a reasonable basis for the 'subsides' and 'assessments,' instead of leaving the matter to be scrambled over by the local authorities of each county. This had ever been the case with the 'subsidy' system, partially reformed though it had been under the Commonwealth 'assessments,' which the Restoration Government adopted with some modifications. The inequalities still, indeed, existed of the state of things, when without more ado 'he that had a cup of wine to his oysters, was hoisted into the Queen's subsidy book.'⁹ Sir William, as a remedy, propounded a regular survey and a real valuation of land, in order to get a basis for a land and house tax, which should be fixed at one-sixth of the total rent: 'about the proportion that the Adventurers and soldiers in Ireland retribute to the King in quit rents.'¹

A land tax—and the argument he points out applies to tithes also—can only exist as a consequence of the value of the land, and is not a cause of the price of land, and therefore does not raise prices; 'for hereby is collected a proportion of all the corn, cattle, fish, fowl, fruit, wool, honey, wax, oyl, hemp, and flour of the nation, as a result of the lands, art, labour, and stock which produced them. . . . Whosoever buys land in Ireland is not more concerned with the quit rents, wherewith they are charged, than if the acres were so much the fewer; or than men are who buy land out of which they know tythes are to be paid.'² The burden of a new land tax would therefore fall on those who paid it in the first instance, after which it would remain an *excisum* or 'part cut out' of the land—the property of the State, laid aside for public uses.

He next passes to the discussion of customs and excise

⁸ *Verbum Sapienti*, ch. iv. pp. 478–480.

tion, ii. 5.

¹ *Treatise on Taxes*, ch. iv. p. 24.

⁹ Lyley, *Mother Bombie*, act ii. sc. 5, quoted by Dowell, *History of Taxa-*

² *Ibid.* ch. xii. pp. 70–71.

duties, and kindred topics. Tin and wool were, at this time, the staple of the English export trade, for England, it is to be remembered, was not then a manufacturing country to any very large extent. The trade in wool was a practical monopoly. In consequence, Parliament had constantly been able to exact an export duty of 100 per cent. on the sack of ordinary raw wool without checking the demand or impoverishing the husbandman, the burden falling on the consumer, who had no other market to fly to. The manufacture of wool was still in its infancy. Holland was the great seat of textile industries, and it had been proposed in influential quarters—under the influence of the example of France—to try to crush the manufacturers of Holland, by prohibiting the export of English wool thither and the import of the Dutch manufactured article, so as to compel the wool to be manufactured into cloth at home.³

With the extreme prohibitory school Sir William hardly condescends to argue seriously. He examines the whole question of prohibition by the light of the examples of the prohibition of the export of money. This he shows is practically impossible, probably alluding to the experience acquired from the East India trade. The revenue officers, he says, had always been bribed, and the result was that the price of the articles bought with the money had thereby been raised to the consumer. If, however, a particular branch of trade will not bear this charge, then he points out it is lost altogether, to the injury of the nation and the prohibition of so much foreign trade; with this difference, that the discretion of what branch of trade shall be curtailed is left to the merchants. If a merchant, wishing to bring in Spanish wine and coffee berries, found that he must pay 40,000*l.* abroad in money to complete the transaction, and was prohibited from sending that amount abroad, he would curtail his business in one article or the other, according to his own convenience; while at least, under a direct sumptuary law on particular commodities, the State, and not a private individual, has the

³ This Act was eventually passed, 14 Charles II. c. 18 and 19 (English statutes).

responsibility of choice as to the goods which are to be allowed to enter. The prohibition of the export of money, he also points out, diminishes the selling power of the English merchant by depriving him of an article, money, which he could bargain with like any other: in this following the arguments of Mun and others, who had pleaded for a remission of the rate against the export of specie to the East, and urged that the sale of Indian imports would bring in an amount of the precious metals far larger than the silver exported to purchase them. As to wool, of which, as already stated, it was proposed to prohibit the export, in order to destroy the Dutch trade in the manufactured article, he points out that the prohibition 'would perhaps do twice as much harm as the loss of the trade.' It would have as an effect that the English producer would raise the price of his article by diminishing the supply, of which there were 'such gluts upon our hands.' Why, he asks, did not the English producer of wool turn his pasture into arable, thereby obviating the necessity of importing such large quantities of corn from abroad, and stop money going abroad to pay for that corn, thereby giving employment to many, instead of 'one man by the way of grazing, tilling as it were many thousand of acres of land by himself and his dog?'⁴

'Suppose,' he goes on, 'our Hollanders outdo us by more art, were it not better to draw over a number of their choice workmen, or send our most ingenious men thither to learn; in which, if they succeeded, it is most manifest that this were the more natural way, than to keep that infinite clatter about resisting of nature, stopping up the winds and seas, etc. If we can make victuals much cheaper here than in Holland, take away burthensome, frivolous and antiquated impositions and offices; I conceive even this were better than to persuade water to rise of itself above its natural spring. We must consider in general that as wise physicians tamper not exceedingly with their patients, rather observing and

⁴ *Treatise on Taxes*, ch. vi. p. 47. Compare Bacon's speech, Oct. 1597, in the House of Commons: 'I should be sorry to see within this Kingdom

that piece of Ovid's verse prove true, "Jam seges ubi Troja fuit"—in England nought but green fields, a shepherd, and a dog (1 *Parl. Hist.* 890).

complying with the motions of nature than contradicting it with vehement administrations of their own; so in politicks and economics the same must be used.

‘Naturam expellas furcâ, tamen usque recurret.’

Passing to the prohibition of imports from abroad, ‘why,’ he asked, ‘should we forbid the use of any foreign commodity, which our own hands and country cannot produce, when we can employ our spare hands and lands upon such exportable commodities as will purchase the same and more.’⁵ ‘For if we should think it hard to give good necessary cloth for debauching wines, yet if we cannot dispose of our wine to others, ’twere better to give it for wine or worse, than to cease making it; nay better to burn a thousand men’s labours for a time, than to let those thousand men by non-employment lose their faculty of labouring.’⁶

He thus indicated that labour is the true foundation of wealth and value, and that to increase the facilities for employment and the yield of labour is the genuine method of increasing wealth, and that gold and silver are only one of many forms of it. ‘If a man,’ he argued, ‘can bring to London an ounce of silver out of the earth in Peru, in the same time that he can produce a bushel of corn, then one is the natural price of the other; now if by reason of new and more easy mines a man can get two ounces of silver as easily as formerly he did one, then corn will be as cheap at ten shillings the bushel, as it was before at five shillings *cæteris paribus*.’⁷

‘But a further, though collateral question,’ he proceeds, ‘may be, how much English money this corn or rent is worth; I answer,’ he says, ‘so much as the money which another single man can save within the same time, over and above his expence, if he employed himself wholly to produce and make it; viz. Let another man go travel into a country where is silver, there dig it, refine it, bring it to the same place where the other man planted his corn; coin it, etc.—the same per-

⁵ *Treatise on Taxes*, ch. vi. p. 48.
Political Anatomy of Ireland, ch.
 xi. p. 356. See, too, the *Quantulum-*
cunque concerning Money, Qns. 6 and 7.

⁶ *Treatise on Taxes*, ch. vi. pp. 48,
 49.

⁷ *Ibid.*, ch. v. p. 38.

son, all the while of his working for silver, gathering also food for his necessary livelihood, and procuring himself covering, etc.—I say, the silver of the one must be esteemed of equal value with the corn of the other: the one being perhaps twenty ounces and the other twenty bushels. From whence it follows that the price of a bushel of this corn to be an ounce of silver.’⁸

Successful trade he saw was a matter of exchange, and that the wealth of a country did not consist, as was then generally supposed, in the value of the exports exceeding that of the imports and the exporter gaining the difference in hard coin: but the value of the trade of any particular country was, on the contrary, to be ascertained—by adding the values—so far as they could be ascertained, of the imports and exports together, not forgetting to take into account the value of the payments made for freight and seamen’s wages and the value of cash payments received from abroad.⁹

But while thus understanding the great central truths of commercial economy, he did not push them to their logical result or always hold clearly to his own principles. Thus he says in the ‘Treatise on Taxes’ that, ‘as for the prohibition of importations, it need not be until they much exceed our exportations.’ Again, wishing apparently to make some concessions to his adversaries, after exposing the absurdity of prohibitions, he acknowledges that nevertheless ‘if the Hollanders’ advantages in making cloth be but small and few in comparison of ours, that is if they have but a little the better of us, then that prohibition to export wool may sufficiently turn the scale.’ The ‘measures of customs’ which, developing this idea, he describes and classifies in the ‘Treatise on Taxes’ seem to give a carefully-thought-out view of a system of trade by which the home producer might be secured to a certain extent, without the volume of trade being seriously checked. A closer analysis would probably have led him to see that this was logically inconsistent with a condemnation of attempts to regulate the tides and to persuade water to rise

⁸ *Treatise on Taxes*, ch. iv. p. 29.

⁹ *Political Arithmetick*, ch. iv. pp. 261–264.

above the natural spring.¹ Again, in the 'Political Arithmetick' he seems to miss the full application of his own doctrines as to the origin of value, and maintains the advantage of foreign trade because it produces 'not only wealth at large, but more particularly abundance of silver, gold and jewels, which are not perishable articles, but are wealth at all times and all places, whereas abundance of wine, corn, fowls, flesh, etc., are riches but *hic et nunc*; so as the raising of such commodities, and the following of such trade, which does store the country with gold, silver, jewels, etc., is profitable before others;' and his analysis of the influence of supply and demand on value, to be noticed further on, is partly vitiated by the recognition of an inherent value in some articles as such, which he thinks must be wealth at all times and places.²

To acknowledge these shortcomings is only to acknowledge that Sir William Petty, though far in advance of his time, had not shaken himself entirely free from the influences of the errors which the mercantile system had accepted from the purely prohibitory system, viz., that wealth consists of the precious metals, and that a system of revenue and trade is to be deemed good or bad, according as it can be shown to promote the influx of those metals into a country or not. There is always a temptation to believe, when certain general conceptions seem present to the mind of an author, that the logical basis of those conceptions must have been present also; but this is an error which the student of economic history has to avoid.

Progress in economic science in the seventeenth century was gradual and tentative, and Petty's grasp of logical method does not require to be exaggerated in order to make him take a high place in the ranks of the founders of the science. It was no mean achievement for any writer in the seventeenth century to have discerned the great theoretic truth on which free trade depends; to have clearly realised that the highest

¹ *Treatise on Taxes*, ch. vi. pp. 42-89, 164.

44. See *Progress of Political Economy*, by Sir Travers Twiss, pp. 64,

² *Political Arithmetick*, ch. i. p. 224, and ch. ii. p. 235.

wisdom did not consist in closing the ports or in prohibiting exports ; to have been willing to welcome the arrival of foreign wealth, even if money had in the first instance to go abroad to fetch it ; and, finally, to go as far as to allow that it was far better to consent even to the importation of perishable goods than to prohibit trade altogether—even though what is said on all these subjects may occasionally appear slightly inconsistent with something that has gone before, or may occasionally be a little uncertain in sound, or not be pushed to the full logical consequence of the premises, or be accompanied by too many apparent concessions to adversaries.

With reference to these concessions, a special set of considerations have to be borne in mind. The early authors on political economy, not only in France, but in England also, wrote with a constant fear before their eyes of the dangerous consequences of speaking too freely. Their publications were frequently anonymous, and even posthumous: the safest course of all. The liberty of unlicensed printing was not yet secured ; and the ill-will of those in authority was easily incurred by the expression of views in advance of the times. The only thoroughly free trade pamphlet of the century, 'The Discourses,' published in 1691 by Sir Dudley North, is believed to have been suppressed. It certainly entirely disappeared from circulation. Parliament had just before proclaimed trade with France 'a nuisance,' and North's pamphlet was like a winter rose. The author of the 'Détail de la France,' Boisguillebert, was not saved by his high position from ending his days in exile and poverty ; and death alone preserved Marshal Vauban from a similar punishment for publishing the strong condemnation of existing abuses and the sweeping proposals of reform contained in the 'Dîme Royale.' This class of considerations should be present to the mind of the reader of Sir William Petty's economic works, when he finds arguments adduced in favour of some of the restrictions of the mercantile system, and observations almost immediately afterwards interpolated—and with curious frequency—absolutely fatal to the whole system, thus proving either that the acute mind of the author was doubtful of the

accuracy of part of his own reasoning, or thought it prudent to dispel error by covert insinuation of the truth, rather than by an open attack on the front of the hostile position, and to leave some loophole to his antagonists, and some means of retreat to himself. Unlike his brother physician and economist in the following century, Quesnay, with whom a comparison suggests itself, his mind was essentially practical. He would probably have preferred the relaxation of the fetters of Irish trade, even of a partial character, to any amount of proclamations of abstract economic truth. Quesnay, sheltered by the silence and security of a royal palace, elaborated a deductive system, and pushed it, with the pitiless logic characteristic of his countrymen, to the most extreme conclusions, and then left it there to blossom or to wither as might happen. Sir William Petty wrote in order to influence the political conduct of the men amongst whom he lived and moved ; he expressed himself ‘ in terms of number, weight, and measure ; ’ he used only ‘ arguments of sense, and such as rested on visible foundations.’³ He had to battle with principalities and powers ; to be closeted with politicians ignorant of the very elements of commercial policy, but able at any moment to silence him ; and to persuade kings more open to flattery than to argument,

qui sciret regibus uti
Fastidiret olus,

is the maxim which, with almost cynical frankness, he placed at the head of one of his essays on Political Arithmetick ;⁴ and at no time would he probably have thought it worth his while to press for more than there was an actual chance of obtaining, or to injure his own case by indiscreet advocacy. ‘ Men of great office in England,’ he said, ‘ are so mutable and slippery, as that they spend their whole time and thought in securing themselves, and dare not employ others than creatures and confederates under themselves.’⁵

³ *Political Arithmetick*, Preface, p. 207.

⁴ The quotation is from Horace, *Ep.* i. xvii. 15, where the full passage is :

Si pranderet olus patienter, regibus uti
Nollet Aristippus. Si sciret regibus uti,
Fastidiret olus, qui me notat.

⁵ ‘ An Opinion of what is possible to be done ’ (1685). Petty MSS.

‘Through the whole course of Sir William Petty’s writings,’ says Davenant, ‘it may be plainly seen by any observing man, that he was to advance a proposition not quite right in itself, but very grateful to those who governed.’⁶ The particular instance, however, which Davenant selects to illustrate this proposition is singularly ill-chosen. He argues that the opinion advanced in the ‘Political Arithmetick,’ and to be noticed further on, that England had nothing to fear from French competition, was put forward by Petty to ingratiate himself with Charles II., whose French sympathies were notorious. But the exact opposite is the case, for that work was not allowed to see the light during the reign of that king and his successor, ‘because the doctrines offended France,’⁷ and were in substance a plea that there was no necessity for England to join France in her crusade against Holland and Dutch trade, but that the true policy for England lay not in trying to crush the manufactures of Holland, but in becoming rich by following the example of the commercial policy of the Dutch Government. Sir William Petty no more advocated a policy hostile to French than to Dutch trade, and would gladly have seen a good understanding between the two nations. For that reason probably he was stigmatised by Davenant as being necessarily a supporter of the French policy of Charles II., on the assumption that everybody must be on one side or the other, and either wish to ruin France or destroy Holland, in order thereby to enrich England. If, however, Davenant had noticed the scattered observations in which Sir William Petty sometimes seems suddenly to recoil from the natural conclusions of his own premises, or to shelter himself behind an ambiguous plea of want of responsibility or of insufficient knowledge, he would not have been so wide of the mark in his criticisms. Some instances of this have already been given in regard to commercial policy. Others may be noticed in such passages as those in which, in the ‘Treatise on Navigation,’ he suddenly asks if, after all, it might not perhaps really be better, instead of employing seamen in trade, to employ

⁶ Davenant, *Political Arithmetick*, Works, i. 129.

⁷ See the Dedication to William III. by Sir William Petty’s son, p. 200.

them under letters of marque against the enemies of England; or in which, in the 'Treatise on Taxes,' after observing that wiser physicians observe and comply with the motions of nature, and that the analogy might perhaps be applied to the customs duties, and yet that a prohibition to export under certain circumstances might be legitimate—he then immediately protects himself with the observation 'that he knows that he is himself neither merchant nor statesman;'⁸ and, after noticing that it may be an impediment to the prosperity of the country 'that the power of making war and raising money for carrying it on is not in the same hands,' he quickly adds that he leaves this question to those 'who may more properly meddle with fundamental laws,' which, he says, he never ventures to do himself;⁹ and if he ventures 'to discourse' of the customs, he only takes leave to do so as 'an idle philosopher,' and warns his readers that, whatever they be, they must certainly be paid.¹

That the Nonconformists increase is stated in the Preface to the 'Political Arithmetick,' with a great appearance of profound respect, amongst the signs alleged to be apparent of national decadence.² But it is then covertly shown, by the example of Holland, that Dissenters are for the most part thinking, patient, and sober men, and 'such as believe that labour and industry is their duty towards God'—'how erroneous soever their opinions be;' and that 'the case of the primitive Christians, as it is represented in the Acts of the Apostles, looks like that of the present Dissenters'—'externally, I mean,' he immediately adds; and that trade is most vigorously carried on in every State and government 'by the heterodox part of the same, and such as profess opinions different from what are publicly established,' of which he proceeds to give numerous instances; and that absolute religious freedom is therefore presumably desirable, only licentious actings, as in Holland, being restrained by force. The reader is at length left in amused perplexity to wonder what has

⁸ *Treatise on Taxes*, ch. vi. p. 48.

¹ *Treatise on Taxes*, ch. vi. p. 41.

⁹ *Political Arithmetick*, ch. v. p. 268.

² *Political Arithmetick*, Preface, p. 205.

become of the observation in the Preface. Elsewhere he points out the economic objections—which are universally true—against the prohibition of the sale of land to foreigners, because such sale would furnish the country with what it then most wanted, a circulating capital for trade; and then prudently adds that he can only suppose that ‘the laws denying strangers to purchase’ were made when ‘the publick state of things was far different from what they now are.’³ But in what way they were different he does not even try to point out, and ends the sentence evidently with his tongue in his cheek.

His silence on the general policy of the Navigation Act may be traced to the same causes. No approval of the policy of this Act is to be found in the ‘Treatise,’ and no open disapproval, and yet the question must have constantly been present to his mind, and indeed prominently so. The interest which he took in the Irish branch of the subject has been related. The General Navigation Act had only just been passed when the ‘Treatise on Taxes’ appeared. That celebrated measure decreed that no goods of the growth, production, or manufacture of any country in Europe should be imported into Great Britain except in British ships, or in such ships as were the property of the people of the country in which the goods were produced, or from which they could only be, or most usually were, exported. The object of the Act was to destroy the Dutch carrying trade and promote the growth of a British mercantile marine, in other words, of ‘shipping;’ and as Sir William considered shipping the principal origin of the wealth of the Dutch, the aim of the Act, *cæteris paribus*, might have been supposed to be likely to command his approval for that reason. Husbandmen, seamen, soldiers, artisans and merchants, he had written, ‘are the very pillars of any commonwealth; all the other great professions do rise out of the infirmities and miscarriages of these; now the seaman is three of these four. For every seaman of industry and ingenuity is not only a navigator but a merchant, and also

³ *Political Arithmetick*, ch. i. pp. 227–229.

a soldier; not because he hath often occasion to fight and handle arms; but because he is familiarised with hardship and hazards, extending to life and limbs, for training and duelling is a small part of soldiery in respect of this last mentioned qualification; the one being quickly and presently learned, the other not without many years most painful experience: wherefore to have the occasion of abounding in seamen is a vast conveniency.’⁴ His acute mind, guided by the study of the Irish question, had no doubt realised that the inevitable rise of freights, consequent on the cessation of the Dutch carrying trade to English ports, must seriously injure the home producer, and that to diminish the number of buyers in English ports was also to diminish the number of sellers. Shipping, therefore, unless naturally developed, would be of little permanent use to the country. But he probably thought that he had done his part, and gained unpopularity enough in influential quarters, by his opposition to the Irish Acts. Certain it is that he passed by the general subject of the Navigation Acts in a silence which, under the circumstances, is eloquent.

An anecdote related by Aubrey might perhaps be cited in support of the view that he approved the encouragement of native shipping by legislative enactments of a distinctly protective character. The Privy Council in Ireland, Aubrey relates, had a notable plan to prohibit the importation of coal from England, and for consuming turf, by which the poor, it was averred, were to be greatly benefited, and a small revenge perhaps be taken for the prohibition of the import of Irish cattle into England. Said Sir William: ‘If you will make an order to hinder the bringing in of coals by foreign vessels, and bring it in vessels of your own, I approve of it very well; but for your supposition of the cheapness of turf, ’tis true, ’tis cheap on the place, but consider carriage; consider the yards that must contain such a quantity for the respective houses; these yards must be rented, what will be the charge? And they found on enquiry that all things considered, turf

⁴ *Political Arithmetick*, ch. i. p. 223.

would be much dearer to the consumer than coal.’⁵ But this story does not prove much. Taken for what it is worth, it does not go beyond an approval of the limitation by law of the coasting trade between England and Ireland to vessels of native origin, a limitation which has not been held inconsistent with the application of free trade doctrines even in modern times, long after the repeal of the Acts of Navigation.⁶

Passing to the consideration of the question of the practical means of raising the revenue, Sir William discusses in the ‘Treatise on Taxes’ the whole question of the customs duties, which at the beginning of the reign of Charles II. consisted of a uniform 2 per cent. duty on the value of all exports and imports. He points out that a tax on exports may at any moment raise the price of commodities above the limit which foreign commerce may be able to afford to pay, and that the smuggler will then have his opportunity for evading the law. He then urges that export duties, if any, should be levied on articles which cannot easily evade the law, such as horses, for they ‘cannot be disguised, put up in bags nor casks, nor shipped without noise and the help of many hands.’⁷ He next dwells on the inconvenience of customs duties on imports, for analogous reasons. They are a payment before consumption, and raise prices altogether beyond the amount which they yield to the State. He also dwells on the expense of collection, and the evasions of duty by the bribery and corruption of the customs officers. He finally suggests the abolition of customs duties, calling them ‘unseasonable and preposterous,’⁸ and the levy in their place of a tonnage duty; and that these duties should be treated as a maritime insurance on the part of the State, which would be a return to their true original function, like those of the Dutch, which were intended merely to keep an account of their foreign trade.⁹ Nevertheless, he admits that ‘all things ready and ripe for consumption may be made somewhat dearer than the same

⁵ Sir Josiah Child in 1671 states that the Act of Navigation had already seriously injured the British Eastland and Baltic trades. See Adam Smith’s *Wealth of Nations*, iv. 384.

⁶ *Bodleian Letters*, ii. 490.

⁷ *Treatise on Taxes*, ch. vi. p. 43.

⁸ *Ibid.* ch. xv. p. 85.

⁹ *Ibid.* ch. vi. pp. 44, 45.

things made at home,' only trade is not to be destroyed or seriously hampered; so that here again his opposition to 'customs' is to be traced more to the practical objections which his keen eye had noticed, than to an abstract opinion in favour of absolutely unrestricted intercourse and open ports.

As a greater profit he thought could be gained by manufacture than by husbandry, and by merchandise than by manufacture, he argued that the great object of English policy should be to promote shipping—which was the mother of trade, and therefore of manufactures and of inventions—and to raise revenue by taxing the manufactured article, and not the raw import. He therefore considered an excise to be the justest of all taxes for the purposes of revenue, as being light to those who 'please to be content with material necessities, and being also self-adjusting;' ¹ only it should not be farmed, but properly collected by paid and responsible officers; also the articles taxed must as a rule be few, and not be raw material: to do the opposite, he says, 'is the same ill-husbandry as to make fall of young saplings instead of dotards and pollards.' ² He points out that excise may be what he calls 'accumulative,' i.e., that within one article you really may be taxing many things together, and, in order to avoid this, whatever articles are taxed should be so as near the point of consumption as possible. 'Some,' he goes on, 'proposed beer to be the only exciseable commodity, supposing that in the proportion that men drink, they make all other expences; which certainly will not hold, especially if strong beer pay quintuple unto, (as now) or any more excise than the small: for poor carpenters, smiths, felt-makers, etc., drinking twice as much strong beer as gentlemen do of small, must consequently pay ten times as much excise. Moreover, upon the artisans beer is accumulated, only a little bread and cheese, leathern clothes, neck beef, and inwards twice a week, stale fish, old pease without butter, etc. Whereas on the other, beside drink, is accumulated as many other things as nature and art can produce.' ³

¹ *Treatise on Taxes*, ch. xv. p. 87.

² *Ibid.* ch. vi. p. 44.

Ibid. ch. xv. p. 86.

‘The very perfect idea,’ he says, ‘of making a levy upon consumptions, is to rate every particular necessary just when it is ripe for consumption: that is to say not to rate corn until it be bread; nor wool until it be cloth, or rather until it be a very garment; so as the value of wool, clothing and tayloring, even to the thread and needles, might be comprehended; but this being perhaps too laborious to be performed, we ought to enumerate a catalogue of commodities both native and artificial, such whereof accompts may most easily be taken, and can bear the office marks either on themselves or what contains them; being withal such as are to be as near consumption as possible; and then we are to compute what further labour or charge is to be bestowed on each of them before consumption, that so an allowance may be given accordingly.’⁴

He proposed to levy an excise on flax in Ireland, on linen goods in England, and on herrings in Scotland:⁵ the above articles being all, in his opinion, those in which the home producer had a practical monopoly, and which therefore would bear taxation most easily. He would have allowed these duties under certain circumstances, especially in Ireland, where ready money was not easily to be obtained, to be paid in kind, and he would also have allowed taxes in England to be paid in corn in the years of an abundant harvest, and the corn to be stored in Government granaries, to meet the difficulties which so often arose from the absence of a proper circulating medium, until that difficulty was provided for by the establishment of a bank and the reform of the circulation.⁶ The hearth money he thought the best form of ‘accumulative excise,’ it being easy to tell the number of hearths, ‘which remove not as heads or polls do; moreover, ’tis more easy to pay a small tax than to alter or abrogate hearths, even though they are useless or supernumerary; nor is it possible to cover them, because most of the neighbours know them, nor in new buildings will any man who gives forty shillings

⁴ *Treatise on Taxes*, ch. xv. p. 83.

⁶ *Treatise on Taxes*, ch. iii. p. 20;

⁵ *Political Arithmetick*, ch. ii. p. 243. *Political Arithmetick*, ch. ii. p. 240.

for making a chimney be without it for two.' He considered the house tax to be a species of excise, or tax on the consumption and use of an article, a house, and to be the easiest and clearest and fittest to ground a certain revenue upon.⁷

The poll tax had, in his opinion, the advantage of being easily collected; but the great objection to it was that it was very unequal, and fell severely on the poorest class, while the attempts which had recently been made at introducing distinctions between different classes of persons in order to obviate these evils had only ended in such a mass of 'confusion, arbitraries, irregularities and hotch pot of qualifications,' that nobody knew where he stood.⁸ It is evident that he gradually came to the conclusion that a just poll or capitation tax was an impossibility, and that, if it was desired to tax proportionally the income of the mass of the people, it could only be done, as in Holland, by taxing their expense, through an excise or tax on commodities; though, as already pointed out, the articles taxed were to be few and the tax light.

The risk of relying too much on this species of taxation had not been fully realised by the political economists of the seventeenth century, who were mainly familiar with the evils of a clumsy system of direct taxation. Sir William Petty was indeed fully aware that there were taxes the incidence of which was not on the person who paid them in the first instance; but he did not sufficiently realise the dangers arising from the fatal facility with which the system could be extended. It was left to Adam Smith to point out, with unanswerable force, that such taxes, especially when levied upon necessities, were calculated to diminish the reward of labour, and therefore either raised wages in proportion or reduced employment, and that their ultimate burden was either on the land in the shape of diminished rent, or on the capitalist in reduced profits; and that, by their complicating and disturbing effects on trade and employment, they diminished the volume of trade and took far more out of the pockets of the taxpayers than they brought into the coffers of the State. By the time of Adam Smith,

⁷ *Treatise on Taxes*, ch. iv. p. 26, ch. xv. p. 86.

⁸ *Ibid.* ch. vii. p. 50.

Holland itself could be pointed at as an example to be shunned rather than to be followed, for taxes on commodities levied with a fatal facility to meet the needs of a war policy had reached such a point that they seriously injured the manufactures of the country.⁹

In the 'Treatise on Taxes' an examination of the possibility of finding a standard or 'par' of value which can be stated in terms follows the discussion of the origin of value. The precious metals, especially silver, Petty points out, are principally adapted and used as a standard or measure of value, owing to their durability and universally recognised value; but even their value, he points out, may vary, according to the supply and other circumstances, and for that reason, not being altogether satisfied with them as standards, he desires to find a universal 'par,' not only for commodities, but for gold and silver as well: an inquiry which may be called the North-West Passage of political economy. 'All things,' he says, 'ought to be valued by two natural denominations, "land and labour:" that is, we ought to say a ship or garment is worth such a measure of land, with such another measure of labour; forasmuch as both ships and garments were the creatures of lands and men's labours thereupon. This being true, we should be glad to find out a natural par between land and labour, so as we might express the value of either of them alone, as well or better than by both, and reduce one into the other as easily and certainly as we reduce pence into pounds.'¹ He does not, however, attempt a further development of the idea, although there is another reference to the subject in the 'Political Anatomy of Ireland,' where he describes it as the most important subject 'in political economics.' In this passage he assumes that there is a certain equality of the cost of production 'in the easiest gotten food of the respective countries of the world,' and that the cost of transporting it from one country to another will be about equal. He apparently alludes to the coarser and healthier forms of diet: oatmeal, rice, &c., which are of general distribution. He next

⁹ See Adam Smith, *Wealth of Nations*, iii. 505.

¹ *Treatise on Taxes*, ch. iv. p. 31.

supposes two acres of pasture land enclosed, and a weaned calf put out to graze there. In twelve months' time the calf will have become one hundred heavier, he thinks, in eatable flesh. Then one hundredweight of such flesh is the 'value or year's rent' of the land. He next supposes the labour of a man, for a similar period of twelve months, to make this same land yield sixty days' food of the same or any other kind. Then the overplus of days' food is the wages of the man, both being expressed by the number of days' food; and in this case land and labour will stand as five to six, the unit being the ordinary day's food of an adult man. This par, he declares, seems to promise to be as regular and constant as the value of pure silver; but he fails to show how it could be adapted in practice to the purposes of trade by any instrument of exchange, and the chapter in the 'Political Anatomy' in which this disquisition occurs concludes, instead, with a fanciful sketch, how the par of land and labour just described could be extended to art and opinion, eloquence, and other matters: inquiries which, he ends by acknowledging, 'are perhaps not very pertinent to the matter in hand.'²

The want of a proper circulating medium, both in quality and in quantity, was one of the great difficulties of the financiers of the reign of Charles II., and, as already stated, the confusion of coins is set down in the 'Treatise on Taxes' amongst the principal causes which unnecessarily increase and aggravate the public charges.³ A chapter is devoted to the arguments against raising, depressing, and embasing the coinage, in which the arguments now universally accepted are clearly stated. They hardly now need a place in a formal treatise on public economy, but at the time were still deemed doubtful and hazardous. Sir William also expressed himself as in favour of a single metallic standard, in a passage devoted to a further discussion of these topics in the 'Political Anatomy of Ireland.'⁴ In the same treatise he points out, with reference to the trade of Ireland, that the in-

² *Political Anatomy of Ireland*, ch. xiv. p. 76.

ix. pp. 344-346.

⁴ *Political Anatomy*, ch. x. p. 347.

³ *Treatise on Taxes*, ch. ii. p. 5, ch.

creasing the cash of the nation 'is not of that consequence that many guess it to be,' but that the amount of money in the country should not exceed the amount necessary as a medium of exchange, 'for in most places, especially Ireland, nay England itself, the money of the whole nation is but about a tenth part of the expense of one year, viz. Ireland is thought to have about 400,000*l.* in cash, and to spend about four millions per annum. Wherefore it is very ill husbandry to double the cash of the nation by destroying half its wealth; or to increase the cash otherwise than by increasing the wealth, *simul et semel*;' ⁵ 'for money,' he observes elsewhere, 'is but the fat of the body politick, whereof too much doth as often hinder its agility, as too little makes it sick.' ⁶

'Laws made against usury, against raising of money, and against exportation of gold and silver, and many others concerning Trade,' were all in his opinion equally 'frivolous and pernicious, forasmuch as such matters will be governed by the laws of nature and nations only;' and, following out the same order of ideas, he points out that the rate of interest depends upon the accumulation of money and the amount of it in a country at any given time, and that therefore money, like everything else, has a legitimate price according to the amount of it, and the relative difficulty of procuring it at any particular time or particular place: a truth which had been obscured by a mistaken interpretation of Scriptural texts in the Middle Ages. What the Jewish law forbade was usury as between Jews, not loans to foreigners. It was a moral precept to be observed as between members of the same society. But the early Christian doctrine, based on the text, 'Lend, hoping for nothing again,' adopted and enlarged the Jewish view till what was termed 'usury' became the most frightful of moral offences in the eye of the Church, and was forbidden by the Canon Law, as contrary both to the law of nature and to authority. It was to be regarded as worse than theft; even what was termed mental usury—the intention of the lender to

⁵ *Political Anatomy*, ch. xi. pp. 356, 357. See, too, *Quantulumcumque concerning Money*, Query 27.

⁶ *Verbum Sapienti*, ch. v. p. 48.

accept something from the borrower without formally binding the latter—was a mortal sin. It was only by a refined and ingenious adaptation of this traditional doctrine to the needs and facts of economic life, as time went on, that any progress at all was possible.⁷ But the general result was that business passed largely into the hands of the Jews at high rates of interest, and that the Church itself had to connive at pious evasions of its own principles by means of *monts de piété* and similar devices; and that after the Reformation trade and commerce found a more natural home in the countries which had shaken themselves free from the meshes of the Canon Law, than in those which still held by the ancient faiths.⁸

Exchange, or local usury, Sir William points out, arises simply when one man furnishes another with money at some distant place, and engages under peculiar penalties to pay him there and at a certain day, or at some convenient time. 'The questions arising,' he proceeds, 'are what are the natural standards of usury and exchange? As for usury the least that can be, is the rent of so much land as the money lent will buy, when the security is undoubted; but when the security is casual, then a kind of insurance must be interwoven with the simple natural interest, which may advance the usury very conscionably, unto any height below the principal itself. Now if things are so in England, that really there is no such security, but that all are more or less hazardous, troublesome or chargeable to make, I see no reason for endeavouring to limit usury upon time any more than that upon place.' But he seems to have conceived the possibility of a state of such absolute security that no '*damnum emergens*' could exist, and any interest on a loan would consequently be unfair beyond the standard of interest on money fixed by the rent of land. The laws against usury, he maliciously suggests, probably arose because those who made such laws 'were rather borrowers than lenders'—a suggestion which soon

⁷ See Ashley's *Economic History*, Book ii. ch. vi.

⁸ An able review of the history of this question has recently appeared by

Mr. Henry C. Lea in a recent number of the *Yale Review*, 1894. See, too, Lecky, *Rise and Influence of Rationalism*, ii. 280.

received a striking illustration in the closing of the Exchequer at the time of the Cabal, and the suspension of the payment of interest on the royal loans. With a sound financial policy and commercial stability, he thought that the rate of interest could be reduced to 4 per cent. without any law.⁹

Of State lotteries—another favourite device of needy monarchs—he maliciously observes that they are a tax upon ‘self-conceited fools,’ and ‘that as the world abounds with this kind of fools, it is not fit that every man that will, may cheat every man that would be cheated. It had consequently been ordained,’ he adds, ‘that State lotteries should be a royal monopoly.’¹

Sir William attributed the increase of rent to the increase of population; and considering the increase of population a certain sign of the prosperity of the country, he looked forward to increasing population and increasing rents. The fears of the consequences of a too rapid growth of population, which at a later period weighed so heavily on the minds of Malthus and his successors, and in France made Babœuf declare that a free use of the guillotine was perhaps the only method of escaping them, did not oppress him. One thousand acres which can support one thousand men he thinks are better than ten thousand acres which do the same thing;² and he says he would prefer to see the Commonwealth passing laws ‘to beget a luxury in the 950,000 plebeians of Ireland, rather than making sumptuary laws directed against the expenditure of the 150,000 optimates, as the latter would only injure the plebeians, while the former would promote their splendour, arts and industries.’³

In the ‘Treatise on Taxes’ a long digression occurs, towards the commencement of the work, on rent, the nature of which he acknowledges to be ‘mysterious.’ He treats it and so far correctly, as a species of profit, arrived at after all the expenses of cultivation have been paid; but he makes no distinction between the profit on capital and the true economic

⁹ ‘Opinion of what is possible to be done,’ 1685. Nelligan MS., British Museum. See, too, *Quantuluncumque*, Qu. 28–30.

¹ *Treatise on Taxes*, ch. viii. p. 53.

² *Political Arithmetick*, ch. i. p. 219.

³ *Political Anatomy*, ch. xi. p. 356.

rent of land. 'As great need of money,' he says, 'heighteneth exchange, so doth great need of corn raise the price of that likewise, and consequently of the rent of land that bears corn and lastly of the land itself. . . . Hence it comes to pass that land intrinsically alike near populous places, such as where the perimeter of the area that feeds them is great, will not only yield more rent for these reasons, but also more years purchase than in remote places, by reason of the pleasure and honour extraordinary of having lands there.'⁴

The 'Political Arithmetick,' from which some quotations have already been made, consists of three parts. The first two consist of a number of short essays on the 'Vital and other Statistics of London, Dublin, Paris, Rome, Rouen, and other great Cities, and of the United Provinces of Holland,' and were published in 1682 and 1687. The scope of the first essay was to be 'concerning the value and increase of people and colonies'—such is the exordium—and was intended to precede another essay concerning the growth of the city of London. Only a sort of syllabus of it remains, the fourteen heads of which well illustrate the many-sided character of the mind of the writer, which at one moment is seen grappling with the hardest statistics, and then flying off into speculative inquiries of an abstruse character in the domain of theology. He proposes to examine 'how many live on their lands; how many on personal estate; how many on professions; how many pay poll tax, and how much; how to plant colonies; the relative value of land in colonies and at home; with calculations in how many years England will be fully peopled.' These, and kindred topics, form the first ten heads of inquiry; from which the reader is suddenly transported by an abrupt transition into an appendix 'concerning the number of wild fowl and of sea fish at the end of every thousand years since Noah's flood,' and an inquiry as to what may be 'the meaning of glorified bodies, in case the place of the blessed shall be without the convex of the orb of the fixed stars;'⁵ just as the essay on population concludes with a grotesque statistical argument to prove that

⁴ *Treatise on Taxes*, ch. v. p. 35.

⁵ *Several Essays*, pp. 98, 99.

there would be room in Ireland alone to bury all the dead bodies up to the day of judgment, which professes to be written ‘to assist a worthy divine, writing against some scepticks, who would have baffled our belief in the resurrection, by saying that the whole globe of the earth could not furnish matter enough for all the bodies that must rise at the last day.’⁶

Sir Robert Southwell also had views of his own about the Deluge, and he sent them to his friend for consideration ; but Sir William professed to be unwilling to meddle with such dangerous matters, notwithstanding his wish to oblige, for even his friendship with Southwell could be limited, though it required Noah’s flood to do it. ‘I thank you for your theory of the Deluge,’ he cautiously replied, ‘but do candidly say that I do know not what to say on that point, but take it to be a Scripture mystery, which to explain is to destroy ;’⁷ so he confined his attention to tracing the economic effects of that event on remote ages. Southwell appears to have revenged himself by declining to enter on the topics suggested. ‘I am angry,’ Sir William writes to him, ‘you did not speak a word neither of Reason nor of Ridicule upon the paper for the Multiplication of Mankind ; as if that desideratum were frivolous ; which I take to be equal to all the projects which have been these many years for the advantage of the world. Pray send it back, with an affidavit on the back of it, that you have not shewn it to any fortunate fop nor taken any Copy of it.’⁸

Sir Robert Southwell was at length persuaded to present his objections to Sir William’s scheme. In Sir William’s answer is to be found all that remains of his opinions on the subject. ‘I reply in these following positions, viz. : 1. It is for the glory of God and the advancement of mankind that the world should be fully and speedily peopled, and that objections against the same may be deferred till a thousand years hence. 2. That the more people there are in any country the greater is the value of each of them. 3. There is no need of careing how to provide for children, as long as there be three acres of

⁶ *Several Essays*, pp. 109, 120.

⁷ March 10, 1676.

⁸ Petty to Southwell, 1685.

and for every head, which I call sufficient peopling. 4. To say that other nations may use the same expedient as well as wee, is an objection to all proposals for the good of mankind. I like your having shewn the paper to Mr. Pepys, for he *is no fopp*, tho' fortunate.⁹ The first of these positions is quaintly elucidated in another letter. 'To honor God,' he says, 'is really (and not in specious words only) to acknowledge his power, Wisdome, etc. Wee cannot say that the whole earth and the fixed stars too were made for the use of man ; but till we see the earth peopled (as perhaps three-fourths is not) we may doubt it ; and not knowing to what other use it was designed, may stumble into the error of its having been made by chance, and not by the designe of an Infinite Wisdome—I should rather say of the greatest Wisdome—wherefore the sooner the stumbling block is removed the better. I add that hee who shall give the reason and use of what lyes in the 8,000 miles space between the two poles of the earth, and of the use of the fixed stars to man, shall honor God more than by singing the "Te Deum" every day. 2nd, I say that, as in great cittyes and cohabitations of men, arts and sciences are better cultivated than in deserts, so I say that if there were as many men on earth as it could bear, the works and wonders of God's Providence would be the sooner discovered, and God the sooner honoured really and heartily. 3rd, I say that Gods first and greatest command to man and beast was to increase and multiply, and *to replenish the earth*. Why therefore should this duty be put off? . . . I should add to my last head : it being probable that the world will not be destroyed, nor the day of Judgement come, till the whole earth be peopled. If we pray that God would hasten the number of his elect, and if the Blisse of the Blessed cannot be perfect till the soul and Body are united, then we must wish the speedy peopling of the world.'¹

While insisting on the advantages of an increased population, Petty had, however, not failed to grasp the fact that, in order that an increase of population may not be injurious, there must be a corresponding increase in the efficiency of labour and in wealth. The internal prosperity of the country

⁹ Sept. 8, 1685.

¹ Sept. 19, 1685.

and the best means of promoting the material improvement of the people are, therefore, constantly present to his mind in the discussions of the subject of population. Thus, for example, his plan for the transplantation to England of a large portion of the population of Ireland, was entirely based on the belief that the population would be increased and the standard of comfort raised by the accession of a large body of productive labourers.²

In connection with this discussion he made a remarkable forecast of the growth westwards of the City of London. 'If great cities,' he says, 'are naturally apt to remove their seats, I ask which way? I say in the case of London, it must be westward, because the winds blowing near three fourths of the year from the west, the dwellings of the west end are so much the more free from the fumes steams and stinks of the whole easterly pyle; which, where seacole is burnt, is a great matter. Now if it follow from hence, that the palaces of the greatest men will remove westward, it will also naturally follow, that the dwellings of others who depend upon them will creep after them. This we see in London, where the noblemens ancient houses are now become halls for companies, or turned into tenements, and all the palaces are gotten westward; insomuch that I do not doubt but that five hundred years hence, the King's palace will be near Chelsea, and the old building of Whitehall converted to uses more answerable to their quality. For to build a new royal palace upon the same ground will be too great a confinement, in respect of gardens and other magnificencies, and withal a disaccommodation in the time of the work; but it rather seems to me, that the next palace will be built from the whole present contignation of houses, at such a distance as the whole palace of Westminster was from the city of London, when the archers began to bend their bows just without Ludgate, and when all the space between the Thames, Fleet Street, and Holborn, was as Finsbury-fields are now.' But this digression, he acknowledges, may prove a mere imper-

² *Political Arithmetick*, ch. iv. pp. 251-254. See also the observations of Ranke, *English History*, iii. 586 (Oxford Edition).

tinence, since it was not unlikely that, long before the time arrived at which all this could happen, they 'might all be transplanted from hence into America, and these countries be overrun with Turks, and made waste, as the seats of the famous Eastern Empires at this day are.'³ He was writing in the days of Mahomet IV., and the hard-won victory of Montecuculli at Saint Gothard, which saved Europe, took place in 1664, only two years after the appearance of the 'Treatise on Taxes.'

The second series of the Essays was largely devoted to a discussion of the calculations of the Parisian statistician, M. Auzout, and was published in the two languages, French and English, in parallel columns. Like the 'Treatise on Taxes,' these Essays and the Discourse contain many points of interest outside the immediate subjects with which they deal. The author addresses himself, for example, to the question of wages, and examines whether a high or a low rate of wages, in the then economic constitution of society, tended to increase production. His own observations of the habits of the cloth-workers in England and of the Irish peasantry compelled him, however reluctantly, to the opinion that the general standard of living was as yet too low to make high daily wages of any advantage to the labourer, because of their tendency at once to reduce their hours and be content with wages just sufficient to support existence at a very low level of material civilisation. 'It was observed,' he says, 'by clothiers and others who employ great numbers of poor people, that when corn is extremely plentiful that the labour of the poor is proportionately dear and scarce to be had at all, so licentious are they who labour only to eat, or rather to drink.' It was the same in Ireland, especially since the introduction of that 'bread-like root, the potato. A day of two hours labour was there sufficient to make men to live after their present fashion, and the cheapness of food was the excuse for the people to live in a condition little above that of animals.'⁴ He argues that an

³ *Treatise on Taxes*, ch. iv. p. 28.

p. 478. Compare the opinions of Sir

⁴ *Political Arithmetick*, ch. ii. p. 240. *Verbum Sapienti*, ch. ii. s. 10,

W. Temple, *Works*, i. pp. 60, 114; and the discussion of the history of the sub-

equilibrium between production and consumption is necessary, and that without an increase of demand, which the State itself in his opinion may wisely stimulate and direct into proper channels by taxation, no improvement or increase of wealth was possible; and that it was the absence of this feeling of the need of the higher wants of civilisation which constituted one of the chief causes of the poverty of the population of that island. 'There are in Ireland,' he says, '160,000 nasty cabbens, in which neither butter nor cheese, nor linen, yarn, nor worsted can be made to the best advantage, chiefly by reason of the soot and smoaks annoying the same, as also for the narrowness and nastiness of the place, which cannot be kept clean nor safe from beasts and vermin, nor from damp and musty benches, of which all the eggs laid or kept in those cabbens do partake. Wherefore to the advancement of trade, the reformation of these cabbens is necessary.'⁵

Other passages show that he attached the greatest importance in theory to the division of labour, which he had already himself applied so successfully in practice during the survey. 'Cloth,' he says, 'must be cheaper made, when one cards, another spins, another weaves, another draws, another dresses, another presses, and packs, than when all the operations above mentioned are clumsily performed by the same hand;' ⁶ and he argues that the division of labour, applied to the ship-building trade, is one of the reasons of the superiority of Holland at sea to France, because it enables the Dutch to build the exact sort of ship required for the circumstances of each particular branch of trade and navigation, and to charge less for freight and maritime insurance.⁷ 'The gain,' he argues, with reference to the trade of London, 'which is made by manufacture will be greater as the manufacture itself is greater and better. For in so vast a city manufactures will beget one another, and each manufacture

jeet in Dr. Schultz Gävernitz's, *Der Grossbetrieb* (Einleitung), Leipzig, 1892, and Luio Brentano, *Hours, Wages, and Production*, pp. 2, 3, London, 1894, where Petty's position as one of the first to inquire into these

topics is acknowledged.

⁵ *Political Anatomy*, ch. ix. p. 354.

⁶ *Political Arithmetick*, ch. i. p. 224.

⁷ *Ibid.* ch. i. p. 225.

will be divided into as many parts as possible, whereby the work of each artizan will be simple and easie; as for example in the making of a watch, if one man shall make the wheels, another the spring, another shall engrave the Dial plate, and another shall make the case, then the watch will be better and cheaper than if the whole work be put upon any one man. And we also see that in towns and in the streets of a great town, where all the inhabitants are almost of one trade, the commodity peculiar in those places is made better and cheaper than elsewhere.’⁸ He distinguishes between productive and unproductive labour, contrasting two classes of men: the first who produce material objects, or things of real use and value, or, in other words, which increase ‘the gold, silver and jewels of the country by trade and arms;’ the other who ‘do nothing at all but eat, drink, sing, play and dance,’ to whom he maliciously adds ‘such as study the metaphysicks or other needless speculation.’⁹ The Essays also show that he understood, at least partially, the principles underlying the laws of supply and demand in their effect on value. Distinguishing between what he terms ‘intrinsic’ and ‘extrinsic’ value in a dialogue on the price of diamonds, ‘I will first take notice,’ he says, ‘1. that the dearness and cheapness of diamonds depends upon two causes; the one intrinsic which lies within the stone itself, and the other extrinsic and contingent, such as are the prohibitions to seek for them in countries from whence they come. 2. When merchants can lay out their money in India to more profit upon other commodities, and therefore do not bring them. 3. When they are brought, upon fear of wars, to be a subsistence for exiled and obnoxious persons. 4. They are dear near the marriage of some great person when great numbers of persons are to put themselves in splendid appearance. For any of these causes, if they be very strong upon any part of the world, they operate on the whole. For if the price of diamonds should rise in Persia, it shall also perceptibly

⁸ *Several Essays*, p. 116.

⁹ *Political Arithmetick*, ch. ii. pp. 235, 236.

in England, for the great merchants all the world over do know one another, do correspond, and are partners in most of the considerable pieces, and do use great confederacy and intrigue in buying and selling them.'¹

Amongst other subjects discussed in the 'Treatise on Taxes' is that of penalties considered as a source of revenue, and the discussion leads him to the consideration of religious toleration from the point of view of the political economist and the statesman. The Sovereign, he argues, by punishing the heterodox with death, mutilations, and imprisonments, thereby injures the Crown and his own revenue; and if heresies existed, it was perhaps because the pastors had neglected their own duties, and they ought themselves to be punished accordingly. The true use of the clergy 'is rather to be patterns of holiness, than to teach men varieties of opinion *de rebus divinis*,'² and their excessive wealth should be curtailed as being injurious to religion; 'unless,' he sarcastically says, it is to be denied 'that there were golden priests when the chalices were of wood, and but wooden priests when the chalices were of gold.'³ In the 'Treatise on Taxes' he says 'that many have heretofore followed even Christ himself but for the loaves he gave them.'⁴ He constantly had floating before his vision the idea of a broad and comprehensive Church, founded on ethical precepts rather than on any definite theological dogma or creed; the Church of God rather than the Church of England, or of any strictly sacerdotal body. To disbelieve indeed in the immortality of the soul rendered man, in his opinion, a beast; and persons holding such views should, he thought, be under civil and political disabilities. With this exception, the only reasonable penalties he considered to be fines for actual breaches of the peace, even if committed in the name of religion. Such fines he defended 'as being the fittest way of checking the wantonness of men in this particular; forasmuch as that course savours of no bitterness at all; but rather argues a

¹ Sloane MS. 2903, British Museum.

² *Treatise on Taxes*, ch. ix. The words quoted above are from the sum-

mary in the Table of Contents, p. xxxi.

³ *Treatise on Taxes*, ch. xii. p. 69.

⁴ *Ibid.* ch. i. p. 3.

desire to indulge ; provided such indulgence may consist with the indemnity of the State ; for no heterodox believer will desire to be tolerated longer than he keeps the public peace.' ⁵ The system was that which Hobbes had laid down in theory, and Sully had applied in practice in France.

In the work on 'Political Arithmetic,' he states the doctrine of religious toleration in the boldest and broadest terms. 'They cannot but know,' he says, 'that no man can believe what himself pleases, and to force men to say they believe what they do not, is vain, absurd and without honour to God.' ⁶ Dissenters, he shows, have been everywhere the principal creators of the trade and manufactures of their respective countries ; even in Ireland, where, the Roman religion not being authorised, the professors thereof have a great part of the trade. 'The Hollanders were one hundred years since a poor and oppressed people, living in a country naturally cold, moist and unpleasant, and were withal persecuted for their heterodoxy in religion, and they were become the greatest trading and manufacturing people in the world.' He thought, however, that the Jews might 'well bear somewhat extraordinary ; because they seldom eat and drink with Christians, hold it no disparagement to live frugally, and even sordidly among themselves, by which way alone they become able to undersell any other traders ; and to elude the excise, which bears but according to mean expenses : as also other duties by dealing so much in bills of exchange, jewels, and money ; and by practising of several frauds with more impunity than others, and by their being at home everywhere and yet nowhere, being become responsible almost for nothing.' ⁷

With his keen eye for abuses, Sir William had observed the inequality of the distribution of the revenues of the Church, and the determination of the beneficiaries not to reform these and other evils. He had seen how frequently small parishes had large revenues, and large parishes small revenues ; and, pursuing his favourite statistical methods, he had arrived at the conclusion that, by a redistribution of parochial areas and

⁵ *Treatise on Taxes*, ch. x. p. 59.

227.

⁶ *Political Arithmetick*, ch. i. p.

⁷ *Treatise on Taxes*, ch. xiii. p. 74.

their revenues, he could not only improve the position of the parish priests on lines consonant with substantial justice, but could also economise half a million a year, which could be paid into the national exchequer. 'If anybody,' he said, 'cried sacrilege, I answer that if the same be employed to defend the Church of God against the Turk and the Pope, and the nations who adhere to them, it is not at all, or less, than to give three fourths of the same to the wives and children of the priests, which were not in being when their allowances were set forth.'⁸ He enforced this argument still further by the remark that the unnecessary multiplicity of parishes led, amongst other disadvantages, to an unnecessary multiplicity of sermons. There were in England 10,000 parishes, in each of which there must be about 100 sermons a year preached. This was equal to one million sermons a year, and 'it were a strange miracle,' he said, 'if these sermons composed by so many men, and of so many minds and methods, should produce uniformity upon the discomposed understandings of above eighty millions of hearers.'⁹

The first two series of the 'Essays on Political Arithmetick' were published during the life of the author, but the third part, which is the work more generally known as 'The Political Arithmetick,' was posthumous and did not appear till 1691. The general object of the book was to show 'the weight and importance of the English Crown.' It had probably been commenced after the disaster at Chatham and the Plague and Fire, at a moment of great national despondency, but it was not completed till a far later date, when the superiority of France instead of that of Holland had become the object of national apprehension. The publication of such a book was impossible at a period when the King of England was the pensioner of Louis XIV., the sworn foe of Holland, and money was desired, not to reform the public services, but to supply the pleasures of the Court and to stifle inquiry. Nor was the free manner in which such subjects as

⁸ *Treatise on Taxes*, ch. ii. p. 9.

⁹ *Several Essays*, p. 115, 'Of the Growth of the City of London.' Com-

pare, as to the abuses of the Church, Burnet, *History of his Own Times*, i. 338.

religion were dealt with, without danger to the author. Therefore it was not till after the Revolution that the book was allowed to see the light, when it was published by the author's son, with a dedication to William III. 'What my father wrote,' so the dedication runs, 'was by him styled "Political Arithmetick" inasmuch as things of Government, and of no less concern and intent than the glory of the Prince and the happiness and greatness of the people, are by the ordinary rules of arithmetick brought into a sort of demonstration. He was allowed by all to be the inventor of this kind of instruction; where the perplexed and intricate ways of the world are explained by a very mean piece of science; and had not the doctrines of the Essay offended France, they had long since seen the light and had found followers, as well as improvements before this time, to the advantage perhaps of mankind.'

The author declares himself satisfied that England is in no deplorable condition, as some would have the world believe, notwithstanding trifling and temporary appearances to the contrary; and he undertakes to justify his belief. 'The method I take to do this,' he explains, 'is not very usual, for instead of using only comparative and superlative words, and intellectual arguments, I have taken the course (as a specimen of the political Arithmetick I have long aimed at) to express myself in terms of number, weight or measure, to use only arguments of sense, and to consider only such causes as have visible foundations in nature: leaving those that depend upon the mutable minds, opinions, appetites and passions of particular men, to the consideration of others: really professing myself as unable to speak satisfactorily upon those grounds, (if they may be called grounds), as to foretell the east of a dye, to play well at tennis, bowls, or billiards (without long practice), by virtue of the most elaborate conceptions that ever have been written "*de projectilibus et missilibus*" or of the angles of evidence and reflection.'

¹

His special aim was to prove that the subservient policy pursued by Charles II. in his relations with France was not justified by any relative weakness on the part of England,

¹ *Political Arithmetick*, Preface, p. 207.

especially if allied with Holland, and imitating her commercial policy. A small country, he argues, and few people, may by their situation, trade, and policy be equivalent in wealth and strength to a far greater people and territory; and conveniences for shipping and water carriage particularly conduce thereto. These exist in England, owing to her extended coast-line and admirable natural harbours, which ought always to secure for her a marked superiority at sea.² He proves the great wealth of England by reference to the extreme ease with which she had been able to bear an increasing amount of taxation ever since the commencement of the century. He warns his readers against being dazzled by the splendours of the Court of Louis XIV., and taking those splendours to be a proof that the wealth of France was greater than that of England. They simply arose, he pointed out, from the King of France taking a large share of taxation out of the pockets of his people, and spending it in brilliant but unproductive expenditure at his Court and in military display. The material condition of France was, indeed, already a warning, and the growing misery of the people, crushed down by war and taxation, was a living commentary on the magnificence of Versailles. The policy of Colbert had been superseded by that of Louvois; and when, in September 1683, that great and at heart peaceful minister sank into the grave, a midnight and almost secret funeral alone protected his remains from the insults of the rabble, who, however unjustly, associated him with the distress of the country.

France, Sir William argued, by reason of perpetual obstacles interposed by nature, such as her inferior length of sea-board, could never be more powerful at sea than England and Holland combined. The people and territories of England are, he says, naturally as considerable for wealth and strength as those of France, and the impediments to her greatness arise from contingent causes which can be removed: the principal being an unwise commercial policy and the

² Compare the passage in Bacon's Essay, 'Of the True Greatness of Kingdoms,' beginning, 'To be master of

the sea is an abridgment of monarchy' (Essays XXIX.).

insufficient organisation of the military and naval defensive forces of the country ; with the absence of religious toleration, proper means of internal communication, a sound banking system, and the other conditions which he notes as those of the wealth and prosperity of Holland. One-tenth part of the annual expenditure of the nation, he calculates, would maintain an army of 100,000 foot, 30,000 horse, and 40,000 sailors, were the revenue properly administered. He wishes to employ the surplus labour of the kingdom in some profitable manner, calculating it could earn two millions a year, but he believes that the capital and labour actually in the kingdom are sufficient 'to drive the trade of the whole commercial world.' Situation, trade, and water carriage would have been useless to the Dutch, had they not been developed by a wise policy. This policy he analyses into three heads, viz. : 1. Liberty of conscience ; 2. Securing the title to lands and houses by land registries ; and 3. the Dutch banking system, 'the use whereof is to increase money, or rather to make a small sum equivalent in trade to a greater.' The Dutch also knew how to make the burden of the maintenance of the poor as light as possible. The burden of military service is also reduced by them to the minimum, and the smallest number possible of the population are engaged in cow-keeping, which in his opinion is the least profitable branch of trade. Here is the example for England to follow ; and the concluding pages of the essay are occupied with an appeal to the younger sons of the English landed gentry, to go into trade instead of starving at home, and to their parents to found a bank with a capital secured upon land. The Dutch, he points out, had known how to profit by their situation on the sea, and how to improve the means of water carriage at their command. Thus situation had given them shipping, and shipping had given them the command of the trade of the world. 'Do they not work the sugar of the West Indies,' he asks, 'the timber and iron of the Baltic ; the hemp of Russia, the lead, tin and wool of England, the quicksilver and silk of Italy, the yarns and dyeing stuffs of Turkey ?' They do so, he replies, because their shipping goes to every part of the world ; 'and

shipping hath given them in effect all other trade, and foreign traffick must give them as much manufacture as they can manage themselves, and as for the overplus make the rest of the world but as workmen in their shops.’³ If the wealth of Holland sprang from a wise and enlightened policy, the principal impediments to England’s greatness had their origin in defects of policy. The widely separated character of the territories belonging to the English Crown, with their different Governments and separate legislative powers, stands first ; and he again advocates a union between England, Scotland, and Ireland, with a view to a uniformity of trade and customs. He dwells on the consequences which may arise from the development of the Government of New England upon lines so widely different from those of the mother country ; and he points out how the whole burden of the defence of all her scattered colonies and territories falls with an unnecessary burden upon England alone. He advocates the formation of an Imperial Council of two Chambers, the first nominated by the Crown and the second by the people. He again attacks the absurdity and injustice of the commercial policy of England towards Ireland ; and argues that, if the resources of England and Ireland at home were properly developed, there was room at home for the whole population which had fled to the Colonies. Finally, he mentions the evils which had arisen from farming out the revenue and relying too much on direct taxation ; from the uncertainty of several material points in the theory of the Constitution and in the law, viz. the King’s prerogative, the privileges of Parliament, and the obscure differences between law and equity, as also between the civil and ecclesiastical jurisdictions ; and from the doubts which existed whether the kingdom of England had power over the kingdom of Ireland ; and lastly, returning to his favourite subject, from ‘ the wonderful paradox that English men lawfully sent to suppress rebellions in Ireland, should after having effected the same, be, as it were, disfranchised, and lose that interest in the legislative power which they had in England, and pay customs, as foreigners, for all they spend in Ireland, whither they

³ *Political Arithmetick*, ch. i. pp. 222, 223.

were sent for the honour and benefit of England.’⁴ But while putting his finger on the weak points in the national armour, he does so in no desponding spirit, but in the belief that he can thereby stir the public conscience and secure their reform, if not their removal, by an appeal to the conscience and understanding of a progressive and vigorous people.

There always have been and there ever will be those who are able to detect around them the signs of the approaching ruin of their country and of the dissolution of society, and also believe that they can distinctly recollect the time when things wore a more promising aspect. For minds so constituted the best medicine would perhaps be a course of the writings of the pessimist literature of previous generations, and the perusal of the unfulfilled prophecies of the authors. The desponding philosopher of the nineteenth century might find consolation from learning how Mr. Sedgwick, who was an Under-Secretary of State in 1767—a year now generally considered one in which the reputation of the country stood at a high pitch in the prosperous period which intervened between the Peace of 1763 and the commencement of the American war—declared that ‘it became more evident every day that this our country is so clearly on the high road to ruin, that nothing as it seems but a miracle can save it.’ Even the elements he declares were in sympathy with the gloom of the political prospect, for ‘the seasons,’ he observes, ‘are totally changed in this country, and one of them is quite done away. We are not now to expect warm weather till the autumn, and may therefore as well dismiss the word summer from our language as being no longer of any use, in reference to our own country at least.’ Nor did Mr. Sedgwick stand alone, for a congenial spirit, Mr. Waite, writing in the gloomy atmosphere of Dublin Castle, was clearly of opinion that not England only, but ‘the great globe itself, as well as those who inhabit it, seems hastening to a final period,’ and ‘that the spirit of the Devil was gone forth over the whole British Empire, and Satan seemed to be hastening his kingdom.’⁵

⁴ *Political Arithmetic*, ch. v. p. 267. *MSS. Commission*, 1885: Weston-Underwood Papers. Appendix, pp.

⁵ *Tenth Report of the Historical* 404, 407, 417, 426.

But Mr. Sedgwick and Mr. Waite in their turn might have found consolation in the still more sad prognostications which were current exactly a century before, when men were declaring that ‘the whole kingdom grew every day poorer and poorer, and that formerly it abounded with gold, but that now there was a scarcity of gold and silver ; that there was neither trade nor employment for the people ; and yet that the land was under-peopled ; that taxes were many and great ; that Ireland and the plantations in America were a burthen ; that Scotland was of no advantage ; that trade was decaying ; that the Dutch were outstripping us as a naval power : and that we only owed it to the clemency of the French that they did not swallow us ; and that both the Church and State were in the same state of decay as the trade of the country,’ with many other equally dismal comments on the condition of the nation/

To these prophets the ‘Political Arithmetick,’ notwithstanding the acknowledgment by the author of the existence of many dangers, was a rejoinder. There is another side to the picture, the author says. The buildings of London grow great and glorious ; the American plantations employ four hundred sail of ship ; shares in the East India Company are nearly double the principal money ; those who can give good security may have money under the statutory interest ; materials for builders—even oaken timbers—are little the dearer, some are cheaper, for the rebuilding of London ; the Exchange seems as full of merchants as formerly ; much land has been improved, and the price of food is so reasonable that men refuse to have it cheaper by admitting Irish cattle ; no more beggars exist in the streets, nor are executed for thieves than heretofore ; the number of coaches and the splendour of equipages exceeds former times ; the public theatres are very magnificent. The King has a greater navy and stronger guards than before our calamities ; the clergy are rich and the cathedrals in repair ; and that some are poorer than others, ever was and ever will be, and that many are naturally querulous and envious is an evil as old as the world.⁶

⁶ *Political Arithmetick*, Preface, p. 206.

CHAPTER VIII

IRELAND

1678-1685

Captain Graunt—The Church of Rome—Condition of Ireland—Roman Catholic intrigues—The Popish Plot—Kerry—The Admiralty Court—Reform of the revenue—The Dublin Society—The ‘Double-bottom’—Death of Charles II.—Private correspondence—The ‘double-bottom.’

THE Duke of Ormonde had hardly been restored to power in Ireland, when in England a widespread belief arose that a vast Roman Catholic conspiracy, or ‘Popish Plot,’ as it was popularly denominated, existed, intended by the instigators and authors to destroy all the institutions of the country.

It is hard at this distance of time to discover what amount of solid truth lay underneath the huge mass of half-insane imaginations which confused and distracted the public mind. The case of Sir William Petty’s friend, Captain Graunt, affords an illustration of the absurdities which, even before the excitement of the Popish Plot, could be accepted as undoubted truth, if a Roman Catholic was concerned. Early in the reign he had become a convert. About the time of the Fire he happened to be one of the trustees of the estate of the Countess of Clarendon, which consisted partly in shares in the recently formed New River Company. As he possessed a considerable knowledge of engineering, he was made a member of the Board of Directors, and as such had access to the keys of the Pumping Station at Islington. It was declared and firmly believed that on the Saturday before the Fire he went thither, cut off the water, and departed, carrying away the keys with him. ‘So that when the fire broke out next morning, they opened the pipes in the streets to find water, but there was none.’¹ The inventor of this story for-

¹ Burnet, *History of his Own Times*, i. 423, 424.

got that Graunt was a City man himself, and likely to be a heavy loser by the fire which he was accused of creating.²

Petty regretted the change of religion of his old friend, but stood firmly by him in his troubles. Graunt had become an opulent merchant of London, of great weight and consideration in the City. Subsequently, however, to the Fire his circumstances grew embarrassed. As soon as Sir William became aware of the fact, though a heavy loser himself, he showed his anxiety to enable his former benefactor to retrieve his fortunes. 'You know,' he writes to him, 'I have allotted 500*l.*, besides the year's rent for my own rebuildings, making, as I conceive, about 700*l.* I will rather forbear laying out that whole sum upon my own grounds, than that you should want a house of your own wherein to manage your trade.'³ He accordingly made Graunt his agent in London. But misfortune seemed to dog Graunt's footsteps at every turn. His efforts to disentangle himself only sunk him deeper in the mire, and threatened to drag down others with him. Sir William, after the exercise of much forbearance, was obliged to withdraw the management of his affairs from his hands. He did not do so, however, without endeavouring to make an honourable provision for him elsewhere. This was a very difficult matter to arrange, as Graunt does not appear to have liked to be obliged to anyone, even to an old friend. Sir William proposed an Irish agency, where his change of religion would have been less injurious to him than in England; but Graunt was unwilling to reside anywhere in Ireland except in Dublin. This was an impossible arrangement, as will be seen from a letter of Sir William's.⁴ '150*l.* per annum,' he says, 'is the least you can have. . . . All that I can contribute to this matter is from my own affairs, which are not at Dublin, viz. I was thinking to have gotten 3 great Baronys in Kerry belonging to me and several others to be united into

² As a matter of fact, Graunt was not admitted a Governor of the New River Company till twenty-three days after the breaking-out of the Great Fire, and the evidence of his guilt was invented long after the date of the

supposed transaction. See article 'Graunt' in Chalmers' *Biographical Dictionary*, where the whole story is examined.

³ Oct. 3, 1667.

⁴ Dec. 24, 1672.

one vast Manor,⁵ and you should be judge and seneschal thereof. This being done, 'tis true you would live imperially; but in an obscure corner of the world; but such where I am forc'd to go twice a year, thro' thick and thin. Consider hereof: I will not attempt the doing hereof except for your sake. Let me know what acquaintance you have gotten by your solicitation and attendance on the great ones, to frame something on that ground. Sir Henry Ford thinks that you, being an Englishman and a Romanist, might be of an indifferent nature to solicit an Union between England and Ireland, to which many of both kingdoms, both English and Irish, seem well affected. . . . As for difference of religion,' he goes on to tell him, 'you have done amiss in several particulars. . . . However we leave these things to God; and be mindful of what is the sum of all religion, and what is and ever was true religion all the world over. . . . I cannot approve of some other things; nevertheless try all the other friends you have, and you shall see none of them shall prove so effectually as Yours, &c.'⁶

Sir William continued to befriend Graunt to the end of his days, and after his decease in 1674 he provided for his widow.

It may be asked why, considering his liberal opinions on all religious questions, did Sir William deem his friend 'to have acted amiss' in changing his religion, and becoming a Roman Catholic. The answer is obvious. Although the conduct of the leading Roman Catholics in the reign of Elizabeth was a splendid proof that their religion in itself was no bar to patriotism, yet Roman Catholicism in the reign of Charles II. was none the less an object of fear, and Roman Catholics of just suspicion.⁷ Men of opinions as different as Temple, Penn,

⁵ Partly carried into effect A.D. 1721, by the erection of the Manor of Dunkerron.

⁶ Dec. 24, 1672.

⁷ 'L'Angleterre,' says a great French historian, 'frémissait de sentir autour d'elle et sous elle gronder ce monde de la nuit. . . . Vaine panique dit-on. Pourquoi vaine? On la juge telle,

parce qu'elle empêcha ce qu'elle craignait. L'Angleterre fut comme un taureau, que le loup vient flairer la nuit. Il frappe de la corne au hasard, et frappe mal; mais ses coups fortuits qui montrent sa force et sa fureur, donnent à penser à l'assaillant. . . . Le complot très vrai fut la trahison des deux frères, Charles II



J. G. Gieserman, Prince.

Walter A. Bostell, Ph.D.

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and Sidney, but all men able to form a competent opinion, believed that some kind of plot was on foot.⁸ Those who had fought and suffered in the Civil War—whether Royalist or Republican—were conscious that the Queen Dowager, foreign alike in blood and religion, had been ‘the principal instrument to advise and encourage the King in his illegal actions;’⁹ and when she returned after the Restoration the watchful Pepys noticed that ‘there were very few bonfires in the city, whereby he guessed that, as he believed before, her coming do please but very few.’¹ The Queen had indeed long since removed to France, but the conversion of the Duke of York, his open preference for the French and Irish, the intrigues of his sister, the Duchess of Orleans, and the infamies of the Treaty of Dover, unknown in their full extent but even then suspected, had together concurred in raising a belief that the removal from the scene of the mischievous personality of Henrietta Maria had indeed altered the characters, but had not changed the nature of the permanent conspiracy which was being constantly renewed on the Continent against the civil and religious liberties of Protestant England. The quarrels of Louis XIV. with the Pope did not deceive the acute statesmen of the time, as these differences seemed a mere repetition of the quarrels of Philip II. with Paul IV., which had never prevented ultimate co-operation against the common enemy. First to ruin Holland, the home of the religious and political refugees from every country, and while engaged in that operation to cajole the Nonconformists in England by a pretended support of religious liberty against the Church; then to overawe both with a large standing army when the projected war with Holland had been brought to a successful close; and, lastly, to put down the assertors of ‘pretended liberties,’ who wished ‘to advance the sovereignty of old hateful laws above the more sacred majesty of princes, the only rightful legislators,’ were the carefully marked stages

et Jacques II, qui vingt-cinq ans durant annulèrent l'Angleterre, ou même la vendirent à la France.’—*Michélet, Hist. de France*, xiii. 255.

⁸ Sidney's *Letters to Savile*, p. 24;

Penn, Collected Works, ii. 678; *Temple Memoirs*, ii. 491.

⁹ Ludlow's *Memoirs*, ii. 327.

¹ Pepys's *Diary*, i. 274; *Secret History of Whitehall*, i. 45.

of the well-devised scheme of the French negotiators at Dover, which sooner or later was to culminate in the public adoption of the Roman Catholic religion by the King, and the admission of the professors of the true faith to a predominant share of power.² Something of all this the public mind more than suspected.

How far the King and his brother were cognisant, how far they consented, and how far, below the high-placed political conspirators, a baser set of men may have existed, ready to use the doctrines of Mariana and the weapons of Jacques Clément and Ravallac, and thereby to make up for the more cautious and dilatory methods of their superiors, is one of the unsolved problems of history.

The theology of the Roman Catholic Church was the theology of the Tridentine Council; and the period was that of the Jesuit reaction, which was in full command at the Court of Vienna and in the affairs of the Empire; which in Italy had stamped out Protestantism, philosophic doubt, and political liberty; and in France had been successfully directed to inducing the youthful King to reverse the policy of his immediate predecessors and to enter on a career of aggression against Holland, the representative Protestant State of the Continent. The liberties of the French Protestants, supposed to have been secured by the express terms of the Edict of Nantes, were meanwhile being cunningly sapped and mined by the action of the Assemblies of the Church, which, whenever the necessities of the Royal Exchequer compelled the King to seek financial aid from their wealthy treasury, made the limitation of those liberties the unfailing condition of their grants. The root of the troubles of Ireland, as in the days of the Cardinal of Fermo, still lay in the intrigues of the Roman Curia, which simply regarded that island as a counter in the great political game being played on the Continent, and was determined never to allow the country to be quiet as long as it suited the exigencies of the struggle.

Sir William Petty, like his master Hobbes, distinguished between the Roman Catholic religion considered as an abstract

² *Secret History of Whitehall*, i. 45 *et seq.*

scheme of belief and morals, and the *imperium in imperio* which the Papal Court desired to set up in every country. 'If,' he argues in a paper on this subject, 'the Pope's power resemble the sun and that of Kings and Emperours resemble only that of the moon, that is to say, If the power of Kings be but reflex and derivative from that of the Pope, then it is absurd to obey prince or state, when the Pope intimates his pleasure to the contrary, and consequently no man knows whether he be bound to kill rather than defend the King, when the Pope demands it.

'The Pope by his power of the Keys, by his keeping men or letting them out of Purgatory, can give greater rewards and inflict greater punishments, than any other the greatest monarch in the world can doe; and consequently the peace and settlement of all nations and peoples lyes at his meer mercy and discretion only.

'All which pretensions and powers of the Pope having no affinity or likeness to the office of Christ, (whose vicar he would be), Protestants doe well to renounce and have reason to call the Pope Antichrist, and to bind his said wild and unruly power in chaines, that it may no longer hurt the nations of the earth.'³

Neither did he think more highly of the claims of General Councils to inspiration. 'If the Holy Ghost,' he says, 'is pleased to inspire infallible truths into a thousand members of a General Council, for the good of the whole Church, why may not the same God immediately inspire into every elect soul, such truth as he himself knoweth to be sufficient for him, without all the perplexities and dangerous dependencies upon Councils, priests, and prelates whom no one can understand.'⁴ But it was not Protestants only, Sir William was well aware, who had to fear. Every scientific man knew the fate which 'Councils, priests and prelates' reserved for those who speculated outside the limits prescribed by orthodoxy. The funeral pyre of Bruno had cast a lurid light over the opening years of the century, and remained a standing notice, with the prison cells of Galileo and Campanella, to the founders of

³ Bibl. Sloane Collection, British Museum, 2903. Plut. xcvi. D. Papers collected by Dr. Hill.

⁴ *Ibid.*

the Royal Society as to what the fate was which the Church had in store for those whose inquiries were not stamped with the seal of ecclesiastical approval, and what might become of their deliberations if they had to obtain the prior approbation of the General of the Jesuits or the exequatur of the Queen's Confessor. Therefore, both as a man of science and a disciple of Hobbes, Sir William, while entirely free from the narrow bigotry of the Calvinistic Protestants, and anxious to improve the civil position of the Roman Catholics, knew, with the example of Italy and Spain before him, that the political supremacy of Roman Catholicism meant, at that period of the world's history, the entire destruction of liberty of thought.

In such a condition of affairs, the uncritical public opinion of the day was ready to accept almost any fable, however absurd, and to declare an implicit belief in the active existence, ready in a moment to stalk the streets, of 'a damnable and hellish plot, continued and carried on by Popish recusants, for assassinating the King, subverting the government, and rooting out and destroying the Protestant religion.'⁵ The exigencies of party strife made it necessary for the ministers and legal advisers of the Crown and the leaders of the opposition to vie with each other in professing to believe in perjuries repulsive to minds trained in public affairs and presumably able to distinguish between false and true testimony. Acting under the same pressure, the tribunals of the law, which till then had been occupied in harrying the Nonconformists of the humbler class, now transferred their attention to the judicial murder of Roman Catholics of rank and position. Soon a demand arose not only for precautions against open attack, and for the prosecution of the leaders of the Roman Catholic party in England, but also for violent measures against their co-religionists in Ireland, who were declared to be in accord with the authors of the plot in England, if not themselves among the actual instigators and authors.⁶

⁵ The words are those of the motion made by Shaftesbury in the House of Lords. *Parl. Hist.* iv. 1022.

⁶ The Eleventh Report of the Historical MSS. Commission, Appendix, Part ii., contains a great mass of valu-

Notwithstanding the mistaken commercial legislation of the English Parliament, Ireland was at the time enjoying a period of greater prosperity than she had known for many years. The population, which Sir William Petty estimated at 850,000 in 1652, was considered by him as having increased, in spite of the loss of 616,000 lives in the Civil Wars and the accompanying disturbances, to 1,100,000 in 1672. Just before the passing of the Cattle Acts in 1664, the export of sheep, butter, and beef to England, so far as could be ascertained, had increased one-third; and the farm of the revenue, notwithstanding the defects of which Sir William was the constant and unsparing critic, showed according to his calculations a yield three times greater than the revenue of 1657.⁷ The walled towns steadily grew, and improved in the character of the housing of the inhabitants. The woollen manufactures were becoming famous. The outward signs of increasing prosperity were especially to be observed in Dublin, Kinsale, Londonderry, and Coleraine.⁸

The great problem remained: how to improve the lot of the mass of the people. Not more than 16,000 out of the 200,000 families estimated to be in the country had more than one chimney in each house. The 16,000 were prosperous enough: little inferior, in fact, to the well-to-do classes in England. 'Even,' says Sir William, 'the French elegancies are not unknown among them, nor the French and Latin tongues;

able information for the study of the Popish plot, though the papers therein referred to relate mainly to the State Trials and other public events, and do not throw much light on the question whether any real plot existed. The influence of events in France on the belief in a plot in England has not been sufficiently taken into account by the English historians. This error has arisen from treating the final Revocation of the Edict of Nantes as an isolated act, instead of as the completion of a long series of previous events. See *L'Eglise et les Philosophes au Dix-huitième Siècle*, by M. Lanfrey

(Paris, 1879, ch. i. 'L'Eglise militante sous Louis XIV'). For illustrations of the influence of these events on English opinion, see the preamble of the Bill introduced into the House of Lords, entitled 'the Protestant Foreigners Bill' (December 17, 1680), printed in the above Report of the Historical MSS. Commission, p. 259.

⁷ *Political Anatomy*, chs. iv. p. 312 and xi. p. 354.

⁸ It was left to the folly and selfishness of the next generation of English statesmen and manufacturers to crush the Irish trade in manufactured woollens.

the latter whereof is very frequent among the poorest Irish and chiefly in Kerry, most remote from Dublin.' But the others all lived in what Sir William describes as 'wretched nasty cabbins, without chimney, window or door-shut; even worse than those of the savage Americans.' To try to implant in the minds of this population a wish for the needs of an improved civilisation; to improve education in all its branches; to diminish, if possible, the number of 'priests and lazing friars; ' to cut down—which was certainly possible—the number of the sinecurist clergy of the Established Church; to remove the grievances of the Protestant Dissenters; to secure the title to land and to develop trade, were, in his opinion, the principal remedies. 'Ireland,' he observed, 'lieth commodiously for the trade of the new American world; which we see every day to grow and flourish. It lieth well for sending butter, cheese, beef and fish, to their proper markets, which are to the southward, and the plantations of America.'⁹

But all such developments required time and the maintenance of the existing framework of government and society, and to the outward eye that framework might have seemed secure; but, notwithstanding the presence of the 'external and apparent government of Ireland,' there always was, Sir William pointed out, in existence by its side, and acting as a constant cause of disturbance and in defiance of all the laws and official ordinances to the contrary, another and 'internal and mystical Government,' consisting of about twenty gentlemen of good family of the Irish nation and of the Roman Catholic religion, who had a firm foothold at the English Court, and at the Court of the Lord-Lieutenant. These gentlemen were supported by regular contributions levied throughout Ireland by the priests of their religion, under the direction of twenty-four bishops, who, owing to their education abroad, had a powerful interest at all the foreign Courts, and an intimate knowledge of their business and policy. They notoriously exercised spiritual jurisdiction in Ireland, and an occult temporal power also, by influencing the justices of the peace of their own religion, so much so that in some parts of the country no Roman Catholic

⁹ *Political Anatomy*, chap. xi. p. 354; xiv. p. 379.

could be convicted, and crime went unpunished, as it was practically impossible for an English and a Protestant settler to live; for the priests had, as Sir William puts it, 'a militia' of their own, consisting of 'the divested persons,' who roamed about the country, and were far stronger than any armed force which the regular Government could oppose to them.¹ They eagerly watched every opportunity, and with undaunted hopes looked forward to the subversion of the existing order of affairs, and to their own restoration to their ancestral lands and their former political supremacy. Already at the beginning of the confused period which followed the fall of Clarendon and the retirement of Ormonde in 1668, they made a bold attempt to resume the offensive. Lord Robartes had succeeded the Duke. He was a great Presbyterian noble of austere manners, who quickly rendered himself impossible. His successor was Lord Berkeley, at heart a Roman Catholic. Notwithstanding the nominal existence of the laws forbidding the presence of 'Popish priests,' Talbot, the Roman Catholic Archbishop of Dublin, was allowed to appear at the Council Table in episcopal robes, and the Lord-Lieutenant was supposed to have said to him that soon 'he hoped to see high Mass at Christ Church.' Meanwhile he had undoubtedly sent him plate and hangings from the Castle to furnish out a ceremony in the Viceregal chapel. But the English Parliament, the majority of which throughout the Long Parliament of Charles II. never wavered in its devotion to the Church of England, and was equally hostile to the Roman Catholics and the Dissenters, became alarmed at the course of affairs. Lord Berkeley was recalled. His successor in 1672 was Lord Essex, a man of the most opposite stamp, and, like Lord Robartes, nurtured in Presbyterian traditions. But his melancholy character made a retention of his high position for any lengthened period impossible, and in 1676 he made way for the Duke of Ormonde.

After these events it was not unnatural that, when a wild

¹ *Political Anatomy*, pp. 327-330. Compare the letter of Archbishop Boyle to Archbishop Sheldon, quoted

in the note to Burnet, *History of his Own Times*, i. 459, 460.

cry against the Roman Catholics arose in England, the Irish Protestants should join in it. The policy of Ormonde was directed to securing the country from any actual danger, but he refused, so far as was possible in the excited condition of the public mind, to gratify the vindictive outcry for blood which arose on every side around him, and was fanned by Buckingham and Shaftesbury in England, in the hope of involving him personally in the unpopularity which attached to real or supposed Popish sympathisers.² The judicial murder of Archbishop Plunket is the chief record of this triumph of religious bigotry and political intrigue. The main argument on which, in order to baffle the popular outcry, Sir William and the supporters of Ormonde relied, was an appeal to the practical impossibility of the Roman Catholics of Ireland, in their then reduced condition, being able, at least at that particular moment, to give serious trouble, whatever might be the intentions of their co-religionists in England, or the hopes of some of the Roman Catholic leaders in Ireland, such as Colonel Richard Talbot and his brother the Archbishop. The opinions of Sir William on this subject were set out by him in various memoranda, the main argument of which is to be found in a complete shape in the 'Political Anatomy of Ireland.' 'That the Irish will not easily rebel again,' he said, 'I believe;' and he gives as reasons the possession by the Protestant interest of three-fourths of the land and five-sixths of the housing of the country, of nine-tenths of all the housing in the walled towns and places of strength, and of two-thirds of the whole trade of the country; also that the Crown had the means of raising, easily and at once, 7,000 men of a regular army, and a Protestant militia of 25,000 men, mostly experienced soldiers; that there were places of strength and cities of refuge within easy reach of the sea, to which in case of

² The death of the Duke's son, the Earl of Ossory, at this moment, was generally recognised as a great public calamity, and is thus quaintly alluded to by Sir William: 'The name of Ossory is a tender thing; he that sullys it by handling with dirty

thumbs won't be excused by saying he meant no harm.' This did not prevent him writing a copy of indifferent English verses on the occasion. Seventh Report of the Historical MSS. Commission, p. 742, 'Ormonde Collection.' *Carte*, iv. 483-490.

necessity the Protestant population could retire till reinforcements arrived from England; that the English fleet would prevent the Irish getting any foreign assistance; that no foreign power now wished to assist the Irish, as none had ever got any benefit by so doing; and that England was full of men discontented with their present situation, who would gladly throw themselves into a new war for the suppression of an Irish rebellion.³ These memoranda he sent to Southwell.⁴ 'I think,' he wrote to him towards the end of the year, 'that the apprehensions of men are allayed since they were composed. The world was then full of Fury. But the Temper of these papers, I conceive to be such as may serve in all Times: therefore keep them till Antichrist comes.'⁵

The passions let loose at the time of the Popish Plot had a powerful effect on the general course of national history and on the development of the powers of Parliament and of the House of Commons in particular. The reign of Charles II. was a period of transition, not only in finance, but in the civil administration also, and in the political relations *inter se* of the different powers of the State. The first indications of the rise of the Cabinet are to be recognised and of the steady decline of the powers of the Privy Council. Sir William Temple in 1679, jealous of the growth of the Cabinet system, had persuaded the King to place the Privy Council on a new and extended basis, so as to be representative of all parties loyal to the Crown. The scheme was intended to maintain the Privy Council as a living power in the State, by including in it all the leading men both in Church and State, and to constitute a body of known and responsible statesmen to act as the advisers of the King and prevent him trusting himself to whatever small knot of political or religious intriguers might have caught the royal ear in private, or have got possession of the House of Commons. The plan was aimed

³ *Political Anatomy*, ch. v. p. 318.

⁴ 'Considerations how the Protestants or non-Papists of Ireland may disable the Papists, both for intestine rebellion there, and also from assisting a French invasion as the state of

both parties now standeth in the present year, 1679.'—Petty MSS. The opinion of Archbishop Boyle, given in Burnet, *History of his Own Times*, i. 459, points to the same conclusion.

⁵ To Southwell, June 10, 1679.

against the domination of the extreme men of both parties, against Shaftesbury and Buckingham, and also against the old Cavalier party. It was the first definite attempt of the wiser heads of the old order that was passing away to prevent the domination of party over the Crown, and it marks the opening of the constitutional struggle of which, in the next century, the schemes of Bolingbroke and the elder Pitt to break up party form the concluding chapter.

Temple proposed to remodel and extend the Irish Privy Council on similar lines, only excluding those who were known to be absolutely hostile to the maintenance of the Acts of Settlement and Explanation. In such a combination Sir William Petty was indicated by public opinion as finding a natural place.⁶

‘The news of the wonderful alterations in the Council,’ he writes on April 29, 1679, to Southwell, ‘hath made us all drunk with the new wine of further expectations. The change happened the same day 20 years, that I answered Col. Sankey in the Parliament at Westminster, the 21st of April 1659 ; and, on the 22nd, the 1st Parliament was dissolved—since which time I have been travailing in dark dirty crooked ways, and have been rowing against wind and tide. May I now come into some smoothings with Sir G. Carterett, the farmers, Kerry quit rents, Vernon, and my £1,100 disaster ; and as my eyes and activity doe faile, may there be clean weather and a calm at sea ; that I may stand the course for this little part of my life, which my own needle points at, and not be dashed to and fro whither the outrages of fooles and knaves doe force mee. The novaturient world is gaping here after the like alterations for Ireland. May whatever is done, tend to the resisting of the French, pulling out the sting of Popery, and pulling up the old Acts of 17 & 18 Car : prim : ⁷ being 3 things I have forced on this many years, and which I believe need not bee forced, if moderate and easy remedies be timely applied.’⁸

⁶ *Carte*, iv. 581.

⁷ The Navigation Laws already described, of which the 17 and 18 Charles

II. c. 2 (English statutes) was the principal Act.

⁸ Petty to Southwell, April 29, 1679.

Fortune now seemed to smile. He was again offered a peerage, but he declined it, unless it was accompanied by a seat at the Privy Council. 'There are both conveniencys and the contrary in being of the Council,' Lady Petty wrote to her connection, Edmund Waller, the poet, through whom a communication on the subject had been made from the Crown, 'for we designed that point as a public sign of His Majesty's heartiness in the other; for a bare Title without some trust might seem to the world a Body without soul or spirit. Now, having said all this, I fear we have said just nothing, for you can't gather from it what we would be at. The truth is that our belief that you believed the thing to have been already and cheerfully granted by the King for us, was the reason of our forwardness, instead of that indifferency which you found in the first part of one of our letters.'⁹

'Though your Privy Council in England be named,' Petty wrote to Southwell, 'yett I have sent you over a list of such as I think worthy of preferment. They are strangers to *most* of our statesmen, nor have they many friends; however pray use your interest to get them in, and endeavour to get yourself made Clerk of the Councill, and make hay therein while the sun shineth.'¹

His prospects also in Kerry seemed to improve. 'We have our fore top sail loose and our anchors a-peeke to sail again,' he wrote to Southwell. 'I hope we shall at last find the North West Passage into the India of Kerry; altho' all the while I continue sailing about the Cape of the Law; and it is the Cape of Good Hope I am now doubling; and truly, Cousin, though I have been unkindly and unequally and absurdly dealt with, yett I goe on without fear of the French, of Popery, nor even of death itself.'² 'Our children and whole family are now (blessed bee God) very well,' he tells Lady Petty. 'I have this day on my back my flower'd velvett suit, which I doe not find of half the substance and weight of what I have hitherto worne. Soe that wee need dig no deeper for the cause of my Lameness, for certainly wearing

⁹ March 8, 1680.

¹ To Southwell, June 10, 1679.

² May 3, 1679.

that suite all the Christmas hollydayes of a most bitter winter, did begett all the effects of cold, even to the marrow of my bones.' ³

Southwell, who already in 1671 had again occupied a temporary diplomatic appointment, in 1679 took the post of Envoy Extraordinary to the Elector of Brandenburg, and terminated his connection with the Privy Council. His experienced eye possibly doubted the stability of the new system; nor was he mistaken. The sun did not continue to shine very long, and after the dissolution of the Oxford Parliament in March 1681, and the complete failure of Sir William Temple's plans, a reaction in favour of the King set in, through the violence of the advanced section of the Whig party in the struggle round the Exclusion Bill, of which the King cleverly took advantage, knowing that, whatever else might happen, the public mind dreaded most of all the renewal of the appearance of the symptoms of civil war. Southwell on his return from Brandenburg practically retired into private life, and fixed his residence permanently at Kings Weston. Thence he resumed his correspondence with Sir William, who by this time was engaged in a fresh series of encounters with his different enemies, who all over Ireland had at once taken heart. Ormonde also hesitated to support his wish to be a Privy Councillor,⁴ and the farmers renewed their attacks. Sir William, as usual, stood firmly by his own view of law and right and determined to fight out the issue, notwithstanding all the wise saws and sermons of Sir Robert on the wisdom of compromise. So the battle went on more fiercely than ever. 'I love peace,' he writes to Southwell, 'but will not buy it on base terms.' 'We are like a cat in a cupboard,' says Lady Petty, 'and must leap forth. We are now in a close fight with the farmers: lend us your prayers.'⁵

His position at the Admiralty was another cause of trouble,

³ June, 1679.

⁴ Ossory to Ormonde, June 5, 1680. *Seventh Report of the Historical MSS. Commissioners*, p. 739. Report on the case of Bandon, farmer of the Revenue of Ireland, 1684. Re orts

on a suit between J. Marshall and W. Petty on the Crown, respecting grants of land in Kerry, 1683. Rawlinson MSS., Bodleian Library.

⁵ Nov. 3, 1680.

That position, he had by this time discovered, was no bed of roses. His knowledge of the principles of the art of navigation was no doubt a qualification, and no mean one, for the office; but it does not appear that, amongst his numerous studies, he had ever directed any special attention to that of the law. For the ordinary practitioners of the Common Law he had indeed an unconcealed aversion, having had only too much to do with them; nor does it appear that he had ever given any special attention to the Civil Law. The general rules also by which Courts of Admiralty were to be guided, being in the seventeenth century but ill-ascertained, and an appeal being held to lie from the Court of Admiralty in Ireland to the English Admiralty Court, his situation as judge was precarious.

In England itself the jurisdiction was in dispute, for 'in the reign of James 1st the Lord High Admiral of the day had protested against the encroachments of the Courts of Common Law, and claimed among other things for His own Judges a Jurisdiction at least concurrent with that of the Judges of the Land in suits arising out of foreign contracts and contracts executed in England, but wholly or in part to be performed on the High Seas, and in suits instituted for the recovery of Mariners wages. This claim Westminster Hall, which up to the time of Lord Mansfield never failed to evince great jealousy towards the Civil Law and its professors, was not prepared to concede.'⁶

At first there was little or nothing to do. 'The famine in

⁶ Those who are interested in the merits of this question will find the arguments on either side in 4th Coke's *Inst.*, 37 *et seq.*, and in a short treatise written expressly in answer to Coke, by Dr. Zouch, an eminent civilian, Judge of the Court of Admiralty in 1641, and again in 1660. The controversy revived with the office of Lord High Admiral, in the reign of Charles II. On one occasion, Dr. Leoline Jenkins argued at the bar of the House of Lords in support of a Bill introduced for the purpose of defining the jurisdiction of the Court

of Admiralty, in opposition to Chief Justice Vaughan. On another occasion he is related to have encountered in the same cause, but before the King in Council, a still more formidable antagonist, viz. Lord C. J. Hale, who, says Molloy, in his preface to the treatise *De Jure Maritimo et Navali*, 'by his law, position, as other his great reasons, soon put a period to that question, which during his days slept, and it may modestly be presumed will hardly (if ever) be awaked.' *Life of Sir Leoline Jenkins*, I. lxxvi.

our court,' Sir William told his friend, Sir Peter Pett, who was now one of the Commissioners of the Navy, 'hath been so great, that I am afraid the tone of its stomach is broken by overfasting.'⁷ These quiet times, however, did not last long, and cases began to come in. He wisely determined, as he wrote to Southwell, to be 'pestilent cautious' at starting, but unfortunately he was not able to hold firmly by this resolve. 'The plebs of lawyers' soon began, as he put it, to find out that the Admiralty Court 'had a shorter and sounder way of justice than its neighbours;' for, as he triumphantly told Sir Peter Pett, 'we stumble not at straws but leap over blocks.'⁸ Troubles naturally soon began, for his enemies were on the look-out, and he soon gave them opportunities. A corpse was washed up somewhere on the coast, and the Court of Admiralty claiming the right to act as a coroner, a jury was impanelled, a verdict found, and the corpse buried; whereupon certain 'cunning fellows' indicted the judge and his officers for holding 'an unlawful assembly.' Then there was a quarrel about the right of the Court of Admiralty to interfere with the building of a bridge over the Liffey near Dublin. Next, a Dutch prize was brought into Youghal by the French, and adjudged to the captors by Sir William. France was very unpopular at the moment, for Louis XIV. was still in full career against the liberties of Holland; and the decision of the Court was consequently fiercely criticised. It unfortunately turned out that the decision was very doubtful in point of law. 'I see the good gentleman meaning well,' was the opinion of Mr. Bedford, one of the leading civilians of Doctors' Commons; 'but he hath not been versed in the practical matters of Admiralty proceedings; and I fear the matter will be complained of both by the French and the Dutch.' Mr. Bedford would probably have been still more horrified if he had seen a serio-comic letter from Sir William to Sir Peter Pett, in the style of the historical arguments founded on

⁷ To Sir Peter Pett, 1679. There are several letters at the Bodleian Library on the subject.

⁸ To Sir Peter Pett, March 19, 1679.

At the Bodleian Library among the Rawlinson MSS., and at Longleat, some memoranda exist, by Sir W. Petty, on 'Admiralty Jurisdiction.'

Scripture precedents which were so dear to the jurists of the time. The pages of Grotius teem with them, and when Whitelocke proposed to the Parliament of the Commonwealth that law proceedings should in future be conducted in the vernacular, he founded his case on the precedent set by Moses, who, he said, had expounded his laws in the vernacular to the Jews. So now Sir William affected to establish the right of the Lord High Admiral's Court to claim tenths on shipping by reference 'to Abraham's paying tenths on the conquest of the five Kings, besides some other precedents of the Admiralty Court held upon Mount Ararat, when Noah was Judge, Japhet registrar, and Shem Marshal of the Admiralty.' 'I wonder,' he says, 'where the Common Law was then, that troubles us so much now? Surely the Admiralty Court was the high Court of the world.' A determined onslaught on the Judge, as might have been expected, soon began.

'Tis expected,' Sir William writes to Sir Peter Pett, 'that I should some time or other build Hospitalles, &c.; but I assure you that the pains, the attendancy and expence I am at, and the fear of treading awry, in order to doe poor men Justice, may well commute *pro tanto* for the Charities I owe the world. I am not weary of what I do, because I believe I do well; but have often wish't I never had engaged in it; and truly without the Appeals into England are taken away, or limited, I will throw up; for I cannot doe the good which is necessary to bee done. The last week I adjudged three considerable men of Dublin to pay wages unto 5 seamen in ye plainest case imaginable.⁹ Now although no case requires a summary and speedy Decision more than this; yett these men appeal to the Admiralty of England, knowing the poor seamen had not a penny amongst them; and must be forc't to go to sea, and disperse themselves before anything can be done therein. Besides why should one Kingdom appeal to another? Can matters of fact be better examin'd in remote parts, than in

⁹ This point about the jurisdiction of the Court of Admiralty over seamen's wages is referred to in Sir Leoline Jenkins's speech at the bar of the

House of Lords, *Life*, I. lxxx. As to Whitelocke and the example of Moses, see Lord Campbell, *Lives of the Chancellors*, ed. 1868, iii. 392, note.

the very place where they happen?’¹ ‘I am like to be brought upon the highway, and say “*Date obolum pauperi Bellizario,*”’ he writes to Southwell. ‘It is a sad thing that I almost in everything doe endure the wrong and the punishment.’²

Under the combined influence of his ‘text letter oppressions’ in the suit with the farmers, and of the depressing atmosphere of the Dublin Court of Admiralty, he about this time composed a long piece of Latin poetry of a melancholy tone, under the *nom de guerre* of ‘Cassidius Aureus Manutius,’ with the title of ‘Colloquium Davidis cum animâ suâ.’ The day on which he retired from his troublesome judicial office was probably not the least happy of his life. He resigned it, he says, ‘not because it affords me no wages, but because it gives me no such work as I expected, and should have been glad to have bestowed my time upon, even without any other recompense or reward than the satisfaction to have done well.’³

More congenial work was, however, awaiting him in England. In 1681 he was summoned to London to take part in the discussion before the Privy Council of the re-organisation of the Irish revenue, the abuses of which were too patent to be able any longer to escape reform. He had an adventurous journey, as the following letter will show :—

‘Chester, 5 June 1682, 6 a’clock morning.

‘We set sayle in the Yatcht from Dunleary ‘upon fryday noon, the 2^d instant, being our weding day; and after a delicate Passage came to Neston about 4 aclock on Saturday, but in the dropping our Anchor the Yatcht struck upon the flook of it, so as in a minutes time there were 2 or 3 foot water in the hold; in less than a quarter of an hower we sunk down to the ground, and the tide coming in was quite covered in an hower more. I was the first that got out into the boat, and as many more immediately followed as were like to sink her. But in brief being near the Shoare, the boat made 2 or 3 returns, and fetcht every body off, with their goods. I was in great fear for

¹ To Sir Peter Pett, 1679.

² Jan. 4, 1679.

³ August, 1683. Petty MSS.

⁴ The modern Kingstown.

my great Portmantle, which was full of papers concerning my businesse ; but all is well. Wee got all safe to Chester the same night, where wee are ready to take coach to be in London on Thursday night, the Eight instant. Robbin Napper comes with me, as also one of the black coach horses, Maurice and Phil.

‘The Principall passengers were my Lady Reynolds and her daughter upon account of my Ladye’s deep consumption. There came also M^r Justice Turner and his Lady with her woman Cicill, who was dear Masyes maid. There is also the Elder Lady Davies, young M^{rs} Stopford and her sister, all goeing for the Bath and 2 of M^r Aldworth’s Children. Wee supped this night, being Sunday night, at the Bpp. of Chester’s, who presents you his service, where wee had Pease to Supper, haveing had the same at Dinner at our Inne, altho’ wee paid 8 shillings a quarter, Wednesday last.

‘Alderman Anderson has marryed one of his maids. Wee left our Children and Sister Biddy well at Dublin. God grant I may find you all so at London.

‘Adieu my dearest.

‘Wee hear the Yatcht is recovered again and almost ready to sayle.’

On arriving in London, Sir William submitted to the Privy Council a plan for abolishing the whole system of farming, and for the introduction of large reforms—including a heavy ale licence—which would have introduced order and regularity into the collection of the taxes, and have greatly increased the royal revenue.⁵ He so far prevailed that the obnoxious system of farming the revenue was abolished, but his other proposals were rejected. His disappointment was great, especially as he could trace the hand of his rival, Sir James Shaen, in the defeat of his plans.⁶ ‘Yesterday,’ he writes, ‘came to toun. It was declared on Sunday night at Windsor, viz. : that the Revenue of Ireland is to be managed by the Lord Langford,

⁵ Notes of interview with Lord Privy Seal, Duke of Ormonde, and Earl of Rochester. Petty MSS.

⁶ See Sir W. Temple’s *Memoirs*, i. 317.

Sam : Kingdon, one Mr. Strong, of the Excise, Mr. Dixon, of ye Customs of London, and Captⁿ Bryden, of Dublin, who as 'tis thought does but represent Mr Trant. By good luck I never sollicitated any body in the case. I only putt in 3 severall papers of proposals, which I think did the service no harme.'⁷ 'Tis said the managers are to have 1,000*l.* per ann., without any obligation whatsoever, and I suppose they may treat how and with whom they please concerning Tangier and the ships ; whereas I did in a manner undertake for the whole by demonstration, by oath, and a wager of 2,000*l.* But I am represented (as the Duke of Ormonde told me this day) by some to be a conjurer, by others to be notional and fancifull, near up to madness, and also a fanatick.'⁸ The appearance in London of Sir William was in fact the signal for a general alarm amongst the whole tribe of revenue farmers and contract-mongers, who hung about the Court and the public offices. Sir William was, however, made a Commissioner of the Navy, and won golden opinions from the King, who admired his varied talents, and only reproached him with excess of zeal and aiming too high : qualities never welcome at any time to that easy-going monarch. 'There is not a better Latin poet living,' says Evelyn, 'when he gives himself that diversion ; nor is his excellence less in Council and prudent matters of state ; but he is so exceeding nice in sifting and examining all possible contingencies, that he adventures at nothing which is not demonstration. There were not in the whole world his equal for a superintendent of manufacture and improvement of trade, or to govern a plantation. If I were a Prince, I should make him my second Counsellor at least. There is nothing difficult to him. . . . But he never could get favour at Court, because he outwitted all the projectors that came neare him. Having never known such another genius, I cannot but mention those particulars amongst a multitude of others which I could produce.'⁹

Having once more failed in his efforts to reform the public services, Sir William returned to Ireland and undertook a long

⁷ To Southwell, Sept. 5, 1682.

⁸ *Ibid.* Sept. 16, 1682.

⁹ Evelyn, *Memoirs*, ii. 95-97, i. 471.

journey into the wilds of Kerry. There he was overtaken by the news of the illness of his children from small-pox in Dublin. 'I can say nothing,' he writes to Lady Petty, under the renewal of this calamity 'but that I have been earnest with Almighty God for their deliverance and your patience in the worst of events, hoping that you leave the disease to Nature without interfering anything of pretended art. This letter may come to your hands about the 3rd of October, and in what conditions it will find you God knows. With reference to both the Children, I can only repeat my prayers for your Christian courage and patience, and tell you how joyful and thankful I should be in case of a good event. But otherwise I cannot tell you how I shall bear it.'¹

Returning to Dublin, Sir William found his children on the road to recovery. He is next heard of busy with the formal incorporation of the Philosophical Society of Ireland on the same lines as those of the parent society in England, and in the establishment of the Dublin College of Physicians. In both these societies he maintained a constant interest. For the Irish Society he drew up a sort of scientific primer, or, as he termed it, 'a catalogue of mean, vulgar, cheap and simple experiments.'² He also drafted the original rules and constitution, or, as they were termed, the 'advertisements of the Society.'³ In after-years his activity on these two learned bodies was looked back to in Ireland as 'the instrument, under God, of reforming the practice of physick in that kingdom.'⁴

*Minutes of the Dublin Society, 1683–84.*⁵

'Jan. 28, 1683–4.—Sir W. Petty produced an instrument in wood contrived by himself for explaining the difficulty about the volution of concentrick circles or wheels, on which he promised to discourse at the next meeting.

¹ Limerick, Sept. 24, 1683.

² *Philosophical Transactions*, No. 168.

³ Weld, *History of the Royal Society*, i. 300.

⁴ Lodge (generally a good authority), *Peerage of Ireland*, ii. 353.

⁵ *Minutes of the Philosophical Society of Dublin*. British Museum Ad. Papers, 4811.

‘*Feb.* 4.—Sir W. Petty discoursed on the instrument he produced at the last meeting.

‘*Feb.* 18.—Ordered that Sir W^m Petty bring in a scheme of experiments to be made relating to land carriages.

‘*March* 30.—Some discourse passed concerning the keeping of a Diary of the weather, which was looked upon by Sir W^m Petty as very difficult to perform, so as to make it useful and instructive, without a great apparatus of barometers, thermometers, hygrosopes, instruments for telling the point of the wind, the force of the wind, the quantity of rain that falls, the times of the sun’s shining and being overcast. As to the common thermometers of spirits and hygrosopes of bat, beards, wooden planks, etc., hitherto invented, it was objected that they loose their quantity by keeping, and that they are not constant standards, and if we made new ones every year, we can make no estimate of the weather in relation to what was observed last year by others.

‘*March* 17.—Sir W^m Petty produced a paper of experiments relating to land carriages. These are registered.

‘*March* 24.—Sir W^m Petty produced an engine for trying experiments relating to land carriages, and discoursed of some experiments he had made therewith in order to the answering some of the Queries he had formerly proposed. The instrument was a solid parallelopiped of 5 inches thick; and 50 inches long, weighing 99 oz., being so ordered that it may be put on wheels, either one sott or two sotts, of equal or unequal diameters; or it may be laid on a sled, or to be drawn on four or two dragging wheels, or on the full flat. Ordered that the Experiment be tried before the Company, though the particulars may be registered. Wednesday next appointed to begin those experiments at Sir W^m Petty’s house.

‘*June* 9.—Sir W^m Petty produced a paper containing a scheme of Experiments for examining Mineral Waters. These are registered.

‘*June* 29.—Mr. King read an accurate and ingenious account of Clonuff waters, to the experiments Sir W^m Petty proposed to be tried on mineral water.

‘*July* 7.—Sir W^m Petty gave an account of a commodious

land carriage he had lately contrived, which drawn by an ordinary horse of about ten pound price, carries one that sits in it at ease, and a driver on the coach box with a Port-mantle of 20 or 30 pounds weight, 25 or 30 miles Irish a day. This carriage is likewise very easy for the traveller, and far more so than any coach, not being overturnable by any height on which the wheels can possibly move. It is likewise contrived to be drawn about the streets by one man, with one in it, and that with less pains than one of the Sedan bearers do undergo. It is likewise very cheap, an ordinary one not costing over 6 or 7 pounds, the 4 wheels being over $\frac{1}{2}$ the money.

'Nov. 1.—Sir W^m Petty was chosen President: W^m Molyneux, Esq., Secretary, and W^m Pleydel, Esq., Treasurer.

'Nov. 3.—Sir W^m Petty, our new President, brought in a paper of Advertisements to the Dublin Society, containing some proposals for modelling our future progress. These were so well approved of that they were readily submitted to by the whole Company.

'Dec. 1.—Our President, Sir W^m Petty, brought in a paper, "*Supellex Philosophica*," containing 40 instruments requisite to carry on the designs of this society. He likewise ordered that hereafter at every meeting an experiment in natural Philosophy should be tried here before the Company, and that the President should appoint on the foregoing Monday what should be tryed on the Monday following and the persons to try it, that accordingly a fit apparatus may be made.'

But even the construction of his land carriage was not sufficient to distract Sir William's attention from his favourite experiments with the sluice boat. 'The fitte of the double bottom,' he writes to Southwell, 'do return very fiercely upon me. I cannot be dissuaded but that it contains most glorious, pleasant and useful things. My happiness lies in being mad. I wish I were grown mad up to that degree as to believe I am honestly dealt with.'⁶ 'I work every day upon the Ship

models,' he writes to Lady Petty, 'and have succeeded wonderfully upon that design. Many think I have little to do when they see me earnest upon it. But I assure you it is such refreshment and recreation as, without it, I could hardly perform my other business. I expect no profit from it, but intend it as a noble legacy to my Sons.'⁷

Sir William's former ill-luck made him cautious in inviting others to join him. 'As for the ship experiments,' he writes to Southwell, 'I have used them as opium, to stupify a sense of my sufferings, nor should I have my friend do himself harm by praising or pressing them.'⁸

A paper is preserved showing fourteen proposed trials of the vessel, as to the result of each of which Mr. Pepys and Admiral Sir A. Deane joined issue with him, backing their opinion with heavy sums, while at the same time expressing 'their most faithful wishes' for the success of the vessel, and that they might themselves prove wrong.⁹ The result unluckily more than justified their doubts, as the last edition of the 'Experiment' was not nearly so successful as the first. 'Sir William Petty's ship,' Mr. Molyneux writes to Mr. Astén, on December 23, 1684, 'was tried this day se'nnight in our harbour; but she performed so abominably, as if built on purpose to disappoint in the highest degree every particular that was expected of her. . . . The seamen swore that they would not venture over the bar in her for 1,000*l.* a man. Even right before the wind she doth nothing, so that the whole design is blown up. What means Sir William will take to redeem his credit, I know not; but I am sure a greater trouble could hardly have fallen upon him.'¹ Sir William fully acknowledged his failure to be enough to make him 'stagger in much that he formerly said.' 'I intend,' he goes on to say, 'to spend my life in examining the greatest and noblest of all machines: a ship; and if I find just cause for it, will write a book against myself, so much do I prefer truth before

⁷ To Lady Petty, December, 1683.

⁸ April 19, 1683.

⁹ Petty MSS., also in the Longleat MS. referred to in the Preface.

¹ Aubrey says: 'There is yet a double bottomed vessel in the Isle of Wight made by one Mr. . . . which they say sayles well.' *Bodleian Letters*, ii. 416.

vanity and imposture.’² To the last the subject exercised a fascination over him, and allusions constantly recur in his letters to his hope of some day successfully solving the problem.

The model of a double-bottomed vessel built by Sir William Petty was formerly preserved at Gresham College, but it is now lost. This, however, was not the model of the actual vessel which perished in the Irish Channel.³ A controversy on the subject having subsequently arisen, Sir William wrote to Sir Robert Southwell as follows :

‘I say (1) that the model at Gresham College is not the model of the real ship which was built; that having two decks, whereas the model hath but one; (2) that the History of the Royal Society hath already given an account of the fate of the ship; (3) if we say any more we must tell how the ship which required so many men had but 17 when she perished; the rest having been taken out of her by the “Dragon” frigate; and might add how little encouragement that design had from *the most navarchale Prince*, with many other things. But you have taught me more discretion, than to follow truth too near. But I have a treatise ready to vindicate the design, and the necessity of attempting it, which will make it rise again when I am dead.’⁴

Events, however, more serious than the failure of his plans for the construction of the sluice-boat now came to disturb him, for early in February 1685, Charles II. died, and a new king ascended the throne of the three kingdoms, on whose

² To Southwell, Dec. 18, 1682.

³ The collections at Gresham College were removed to the British Museum when the original College was demolished in 1768, but the model of the ‘Experiment’ is not now in existence, unless it can be identified with one of the ancient models in the Naval Museum at Greenwich.

⁴ Petty to Southwell, Feb. 1681. Amongst the Petty MSS. there are two volumes of papers relating to the different trials of the ‘Experiment,’ and other questions of ship-building, with diagrams. The Rawlinson MSS.

in the Bodleian Library contain ‘An Essay on a general scheme of Naval Philosophy,’ marked as ‘lent to Pepys’ in 1682; and ‘An Account of models of ships, produced and explained by Sir William Petty;’ also ‘A Notice of the Double-bottomed ship.’ In the *Memoirs of the Margravine of Anspach*, vol. ii., ch. vii., an account is given of an attempt by John, Marquis of Lansdowne, in 1806, to renew the experiment of his ancestor, which, however, nearly ended as disastrously as that of 1684.

accession the Roman Catholic party founded confident expectations of a restoration to their lost estates and former predominance in Ireland. But before entering on the consideration of the action of Sir William Petty in the crisis immediately preceding the Revolution of 1688, the reader may be invited to peruse the following letters belonging to the period he has already traversed :—

Sir William Petty to J. Aubrey.

‘ Dublin : 29 May 1678.

‘ S^r,—I have received your kind letters, for which I thank you. As for the Reprinting the booke of Taxes I will not meddle with it. I never had thanks for any publick good I ever did, nor doe I owne any such booke. As for that of Duplicate proportion, I take M^r Lodewick’s Paynes trial to put that discourse into the real character, to be an honour to Bishop Wilkins and myself, but doubt of its acceptance in the world.

‘ As for the opinion of Dr. Woods and others, that the Emanacions of Visibles, Audibles, &c. should have been in triplicate (not duplicate) proportion, I say that neither is demonstrably true, but that duplicate doth better agree both with reason and Experience. Carpenters and Whelewrights say that the diameter is to the Circle as 1 to 3. Others say better as 7 to 22, but neither is exact ; yet both serve the turne. So what I have done in that discourse was only to keep men from grosse errors, and for bringing them into the way of exacter truth. I hope no man takes what I say’d about the mocion and burthen of horses and the living and dying of men for mathematical demonstracion, yet I say they are better ways of estimating these matters then I had ever heard from others. I hope better are now found out. But there are 2 or 3 real mistakes in that treatise of which more p^r next.

‘ I am,

‘ Yours and Mr. Hooks, &c.

‘ WM. PETTY.’⁵

⁵ Egerton MSS., British Museum, 2231, H. 90-98

*Sir William Petty to Sir Robert Southwell on the
death of Lady Southwell.*

‘Dublin: 31 Jan. 1681.

‘Dear Cousin,—I rec^d last night the Ill News of a separation between those who had been happily united. And I doe now endeavour to answer the devout custom of condoling with you; and I do it by imagining & figuring to myself what condicion I myself should be in upon the like occasion.

‘I am persuaded we are both Unison harp-strings as to the Love of our Wives; wherefore, you being struck, you may easily believe that I also tremble, and really so I doe.

‘When your good father dyed, I told you that he was full of years and ripe fruit, & that you had no reasons to wish him longer in the pains of this world; but I cannot use the same argument in this case, for your Lady is taken away somewhat within half the ordinary years of Man, & soon after you have been perfectly married to her: ffor I cannot believe your perfect Union & assimulacion was made till many years after the Ceremonies at Kingsington.

‘What I have hitherto said tends to aggravate rather than mitigate your sorrow. But as the sun shining strongly upon burning Coles doth quench them, so perhaps the sadder sentiments that I beget in you may extinguish those which now afflict you. The next thing I shall say is, that when I myself married, I was scarce a year younger than you are now; & consequently do apprehend that you have a second crop of contentment & as much yet to come as ever I have had. In the next last place I beg you to divert yourself, by entertaining some powerfull thoughts of other kinds. I had yesterday a hopefull day in the Exchequer. I have the vanity to think that to tell you so would a little refresh you: I wish you could hear a thousand of such news from a thousand as sincere friends as is

‘Yours,

‘W. P.’⁶

⁶ Petty MSS.

Sir Robert Southwell to Sir William Petty.

‘Kingsweston, 28 Feb. 1681.

‘Dear Couzin,—You were not onely my comforter uppon the death of an excellent father, but you excercised greatte skill to prevent his death. And now by yours of the 31th past, you doe not onely console the greatte loss I have sustained in a wife, but you seeme to think it reparable. As to the loss, ’tis true ’twas but of a mortall thing, and soe I must submit. He that has an unlimited jurisdiction did it; for we wanted nothing that humane ayde could give. But perhaps I ought not to repine, that one whoe had soe many preparations for heaven, was taken to the rewards thereof.

‘But when by 19 yeares conversation I knew the greate virtues of her mind, and discover since her death a more secret correspondence with Heaven in Acts of pietye and devotion which before I knew not of, you will allow me att least for my childrens sake, to lament that they have too early lost their guide.

‘I have had many other close tryals since my father’s death. The loss of a good mother, of an onely sister, two nephews educated by my care, and a beloved son who dyed three years before. And yet I may saye he dyed but even now, for by what steps & motions he declined towards his grave, just the same were now gone over againe by his deare mother, to the observation & sorrow of all that beheld. Soe that a tragedye of the greatest past affliction I ever had, was thus repeated upon me; and I leave you to judge whether I had not loaden enough. But I hope all these rugged paths will but conduct me to my journeyes end. ’Tis certain the Earth becomes less worthy for the good whoe leave it. And weake Nature may be allowed to think Heaven the more desirable for their friends who are gone before.

‘There is but one strong Motive in me to respite such desires; which is the consideration of 4 young children whoe will hardly find soe good a friend as myself in the whole world. They deserve well from me, & with application may be leade into the Paths of a virtuous life. They are all parcels of their

Mother, acting in small different resemblances the tenor & habit of her life. Soe that as to your expedient, I look uppon it, under correction, but as a meere knocking these 4 on the head. And I cannot think myself out of the Bonds of Wedlock while they live. Your owne case & mine (about this age) was quite upon a different foote, & without any proportion. I speake not this in sorrow, for I have wip'd that away, & am cheerfully entertaining my selfe heere with my children; & cannot wish for a better Employemt of my life. My son either walks or rides about with me, repeating att a time an 100 of y^r verses (of the 100th psalme) with such Accent of delight as would perhaps give you Entertainment to heare him. The Loadstone, Mercury, the Bee, the 4 small Animalls & so too the Stars &c, are all to him as the Marine Compass. And would you have me forgett this Boye, whoe remembers with pride the kiss you gave him for demonstrating at 8 years old, an equilateral triangle? Well of this I have saide enough to justify my rejection of any Salvo that can ever be thought of on this side Heaven, & I will onely add, as to my selfe, that being wonderfully troubled with the Scurvey in my nerves, I am under all the tryalls I can brave to get some deliverance from it.

‘As to your good Sentence lately obtained in the Exchequer, I am sure I take reall Comfort in itt, & wish from my hearte that you may see a short & prospering event of that greate perplexitye, that soe the world might have the fruits & treasures which your leisure & tranquiletye would afford.

‘My blessing to my Godson, & to his hearty brother. My boy puts in his humble service to his fine Couzins. And I am ever

‘Y^r Most Hum. Ser.

‘R. S.’⁷

Sir William Petty to John Aubrey.

‘Dublyn: July ye 12. 81.

‘S^r,—I recev’d your kind letter, but have noe sorte of memory or idea of the paper you mention concerning the

⁷ Petty MSS.

Coals in Surry, but am glad to understand there is any such thing; and do wonder that noe provision is made for Fuell in case the Newcastle trade were intercepted.

‘I am not forward to Print my Political Arithmaticke, but doe wish that what goeth abroad were compared with the copy in S^r R. Southwell’s hand, which I corrected in March.

‘I have taken care that the Elephant which was so unfortunately burnt here, might be dissected for so much as the fire left capable of it; which, such as it is, shall be sent to the Society. The poore man who owns it, hopes to make some advantage by shewing the skeleton, the trunk, and gutts, and consequently values them at a vast Rate; wheras I hoped to have purchased them for the repository, but doe wonder that the English and Dutch surgeons liveing in India, have not made a perfect Anatomy of this Creature, especially of its Trunke, nor sent the principall Bones of the largest of them.

‘You write of some other particulars which you had from Doct^r Wood and Mr. Weeks. Pray pursue that matter, for I begin to be afraid of liveing in a Place where we have 10 exasperated enemies for one friend, and where I am forced to spend my whole time upon what I hate.

‘Pray give my service to Mr. Colwell, Mr. Hill and Mr. Hooke, and as many more of our Society as you think fitt, for I name these three because I observe them to have been most constantly there.

‘I am S^r

‘Your affectionate humble servant,

‘W^m. PETTY.^s

‘For Mr. John Aubrey at Mr. Hooks Lodging In Gresham College, London.’

Sir William to Lady Petty.

‘Dublin: 10 Sep. 1681.

‘I shall returne little answer to yours of y^e 30th of August, otherwise then that I am affected with what you say of your ague, and am glad you understand the cure of it. Wee are here all in good health, and our affairs do rather mend than otherwise.

^s E erton MSS., British Museum, 2231, f. 92.

‘I am just now returned from Kilkenny, having through God’s mercy not had the least disaster or disappointment in that affair. My Lady Dutchesse is soe learned in the art of Civility, that it is a hard matter to discern them from reall kindness—but I assure you that if she hath not a reall and extraordinary kindnes for us both, I am much mistaken. In particular she did (what was not usuall) earnestly invite me to lye in the Castle, and that with extraordinary expressions to others, which was, “That where ever shee had a house, I should never lye out of it.” It were vanity (and perhaps tedious) to relate the rest. Let it suffice that I say I believe that she is very reall, etc. My Lord Lieutenant also was kinder than ordinary, soe as my hopes that he will doe us good in our business doth not lessen: And I find that by the printing of our papers, the business is better understood than formerly.

‘Adieu, my dearest.’⁹

Sir William to Lady Petty.

‘Dublin: 25 March, 1682.

‘I am now returned from Kilkenny, where you were remembered by the Dutchesse, Lady M. Cavendish, and many others; as also was Cozen Waller. I thought my Lord Lieut^t would have done something for me more than hee did; but a little progresse was made at the expence of 13^{li} in a 10 dayes journey; and I hope well next terme. They come to towne in the beginning of Aprill, and think to bee in England in May, and Lord Arran to be Lord Deputy, but this you should have written. The cause of this journey is sayd to [be] the marriage of Lord Ossory.

‘As to S^r J. Shaen, hee never did mee good, nor did I ever do him wrong. Hee is a dangerous freind and a mischevous foe. Let him make himself rich, and I will hope to make him honest and pay his debts. As for the petition, let Nature work. If the Reduced Collumn prosper, we can spare it. What is meant by the King loosing 13000^{li} per annum, if my Kerry state be true, I know not.

⁹ Petty MSS.

‘I am ravisht with deare My: Annes writing. I shall bee glad to see the like progresse in Arithmetic, for if God blesse mee, I will give her somewhat to reckon. But shee shall not bee bound prentice to a scrivener, but shall bee her owne papas steward and secretary mistresse. . . .

‘I have seen the transactions of Gresham Colledge, wherein I find the paper Dr Wood sent mee, for which I thank him, and an accompt of the other things hee mentions. Tell him, I ever thought the fatigue of his place too great for him in quantity and quality. A person of more strength and youth, tho’ of far lesse learning (nay of no other learning then what is barely requisite) might do well enough. Neither will the Sallary of 100^{li} gratify a better. I wish twere in my power to proportion rewards to merits. I would begin that vast neglected worke by doing Dr Wood right; but “curs’t coves have short hornes.”

‘When you have done with Brother James, let him goe directly to Kerry, as formerly directed. I say nothing of our boyes, because my sister does it. Mr. Mesnill is desperately in love with Lady Clancartty’s Frenchwoman, whereof shee complaynes alowd and I grumble inwardly. Wee make no signall progresse.

‘Adieu, my dearest.’¹

Lady Petty to Sir Robert Southwell.

‘London: Feb. ye 15.

‘I should not send the enclosed, Dear Sr, wthout asking yu how yu doe, fearing the retirement yu are in suits too much with the melancholy of your Temper at the time, and may prejudice your health, for which I’m sure none is more Concern’d. Let me advise yu to admite of the Ingenious and harmless diuersion of your preety Children, and endeavour to preserve your health, the loss of which may be so preiudiciall to them and all your friends; amongst which number I hope you will please to allow me, who am with all respects, Sir,

‘Yr affect huble servt

‘E: PETTY.’²

¹ Petty MSS.

² *Ibid.*

Sir William Petty to John Aubrey.

‘London, 22 August, 1685.

‘S^r—I received the Favour of your Letter dated the 17th Instant, being just returned from Epsom, where haveing been with my Wife and Family about 12 days to take the Ayre and the water, just as wee were comeing away, wee had such an overturn of the Coach, as hurt several of us more or lesse, but my wife so terribly, that wee doubted of her life, the two or three first days, but have this day at the month’s end brought her home past all fear of Life or Limb as wee think.

‘I have carefully perused your letter, and do heartily thank you for prefering mee in your thoughts to the purchase of Tobago, and do believe it to be such an Elysium as you Fancy; but the designe is as forraigne and incongruous to my circumstances as any thing can bee, for I am above 60 years old, and am under some extraordinary thoughts concerning our affairs in Ireland, nor am I willing to be a Leader of Malecontents; neverthelesse if there were two or three such Partners as I did like and could trust, I might (things standing well at home) venture £500 upon such a Designe; for my opinion is upon what I have observed from the Accounts of the People, that not above half the Women are maryed, and that if the Government pleased there might bee such a multiplication of mankind, as in 1500 years would sufficiently plant every habitable acre in the world.

‘As to the measures of all sorts, it is a shame that they are not reduced to One, not onely over all our Kings Dominions but over the whole world also. But the difference thereof is a kind of mental reservation to the advantage of one party in the bargain. I wish you would, besides the Account of Sheep and the quantity of Ground they feed on, (which is a laudable designe), bring me an Account of the People of two or three Parishes, according to the directions I printed when I was last in England.

‘I long for the Terme because you promise to be hear then,

and in the meantime wish you all the good you can wish to yourself, and remain

‘ Your very humble servant

‘ W. PETTY.³

‘ For John Aubrey Esq^{re}, att Broad Chalk neer Salisbury.’

NOTES TO CHAPTER VIII

York Buildings : December 6, 1684.

Your Sluce-Boat (the St Michael) being by Our latest Advice from Dublin, upon y^e point of entring on her first Tryall at Sea ; Wee send you Our most faithfull wishes for her Successe, with a Paper that may (if you shall soe think fitt to use it) in some measure Compensate the Charge you shall have goeing in the Experiment ; remaining wth inviolable respect,

Yo^r most affectionate and most

faithfull humble Servants

S. PEPYS, A. DEANE.

*S^r William Petty's 15 Propositions touching his Sluce Boat,
Answered by S^r Anth^o Deane & Mr Pepys.*

S^R WILLIAM PETTY.

WHEREAS there is now Building at Dublin, a Double-Keel'd or Sluce-Vessell, concerning whose Strength, Burthen, Saileing, Steerage, Rideing at Anchor, accomodations, &c., many Opinions have been offered, to the Prejudice of y^e Designe ; therefore to distinguish the said Opinions from Envy and Calumny, the following wagers concerning the said Shipp are proposed, viz. :

1. That at her Launching shee shall not draw above 3½ feet water at a medium.

2. That with eight paire of Oares, shee shall row equall to a wherry of one paire, putting either of her ends foremost.

3. That being fitted for the Sea with Cables, Anchors, Boats, &c. on board, shee shall (over and above the same) carry 40 Tunns weight, without drawing above 5 feet water, beside the Keel.

4. That shee shall goe to Sea without Ballast, and yett carry as much saile as any other vessell of her Breadth.

5. That (as an Argument of her Strength) after 7 dayes being

³ Egerton MSS., British Museum, 2231, f. 95.

at Sea, the distance of her Keeles shall not alter half a Quarter of an inch.

6. That shee shall not Leake above a hogshhead of water a watch, one watch with another, during her Passage to and from Holy-head.

7. That shee shall steer better than any other Vessell of her length, that is to say, come about above a Quadrant in Lesse time and space.

8. That shee shall goe from within y^e Barr of Dublin into y^e Bay of Holy-head, and back againe within the same Barr of Dublin, in any 48 houres of the whole yeare, wherein there is a full moone.

9. That shee shall with any Winde and Weather, carry Saile enough to worke her.

10. That shee shall ride more easy at an Anchor, y^t is to say, heave and sett in sharper Angles and Slower Vibrations, than any other Vessell of her Length.

11. That shee shall have a Cabin of 14 foot long, 11 broad, and 6 high in the Clear, & shall without the said Cabin carry 12 horses & 12 Tuns of goods.

12. That shee shall passe the Barr of Dublin any heure of the day, and goe from the Key of Dublin to the Key of Chester any day of the yeare.

13. That shee shall Out-saile, By and Large, any other Vessell by one-sixth part.

14. That shee shall cost lesse, than any other Vessell of the like performances, after the first Experiment.

15. That shee shall Saile with the same hands as any Vessell of 40 Tuns.

S^R ANTH^O DEANE AND M^R PEPYS do (in Returne hereto) Undertake :

1. That drawing but 3½ feet water at her Launching, shee shan't make good y^e 2^d, 7, 8, 10, 12 & 13th of the following Propositions, for £100.

2. Shee shan't ; for £500 upon each end.

3. Shee shan't ; for £200.

4. Shee shan't and make good y^e 7th, 8, 10, 12, & 13th of the following Propositions ; for £100.

5. Any one day of the said seven proveing of soe much wind, as to bring her to lye a try but one twelve houres, her Keels shall alter their Position more than the 8^t of an Inch ; for £100.

6. Shee shall Leake more than another Vessell as new built as shee ; for £100.

7. Another Vessell of the same length and Proportion of Rudder, shall come about in Lesse time ; for £100.

8. Shee shan't ; for £100 a time.

9. The Vessell that opposes her shall doe the same ; for £100.

10. The sharpnesse of Angles, & Slownesse of Vibrations being of difficult decision at Sea in foul weather, it is offered for greater certainty, that another Vessell shall ride with her at Sea in a Storme of wind, when the first of them that breaks loose or cutts, shall loose £100.

11. Another Vessell of the same length and breadth shall have and doe as much for £100.

12. Shee shan't ; for £500.

13. Shee shan't ; for £200.

14. A vessell of y^e like or better performance shall bee built for lesse than shee, even after the first Experiment ; for £100.

15. A Vessell of like Burthen shall saile in the Sea with fewer hands, for £100.

Note.—That upon condition S^r William Petty will personally be on board his Vessell (as wee will on ours) at the proofs of the 4th, 5, 8, 10 & 12th Articles, the wagers upon each of those Articles shall bee double.

S. PEPYS ; A. DEANE.

York Buildings : 6 Dec^r 1684.

CHAPTER IX

SIR WILLIAM PETTY AND KING JAMES II

1685-1687

Accession of James II.—‘*Speculum Hiberniæ*’—Optimism of Sir William Petty—Plan of a Union—Reform of Parliament—Conference with the King—Apprehensions of danger—Reaction in Ireland—The Declaration of Indulgence.

IN Ireland the accession of James II. was received with the gravest apprehension. It was generally believed that the new king, exasperated by the attempts of the extreme Protestant party in England in the previous reign to exclude him from the succession, and elated by their failure, would ascend the throne with a fixed determination to revenge the wrongs of the Roman Catholics on those who had not only attempted to deprive him of the throne for changing his religion, but had also caused innocent blood to be shed during the outburst of fanaticism in 1678. The Acts of Settlement and Explanation were looked upon as doomed, for although James, as Duke of York, held vast tracts of Irish land, it was believed that the surrender of these to the former owners would be easily purchased by a liberal grant, from a Roman Catholic Parliament, of lands to be taken from Protestant proprietors. Only a small minority clung to the hope that, sobered by misfortune and warned by the example of his father of the danger of extreme courses, he might follow a prudent policy; and while gaining religious toleration and a free exercise of their form of worship for his own co-religionists—which might also be the occasion of securing like benefits for the Protestant Non-conformists—he would not seek to repeal the Acts of Settle-

ment and Explanation, and while freeing England from the domination of the narrow party which had governed it almost uninterruptedly since the Restoration, would not be tempted into seeking to throw Ireland into the hands of the Talbots. To the views of this minority Sir William was inclined to lean, and his friendship with Penn, who held similar views, no doubt increased his tendency to be hopeful of the royal intentions. According to Sir John Perceval, a friend of Sir William's and a member of the old Cromwellian party, 'the King, in order to persuade men to vote for taking off the penal laws and tests, was ready to renounce the Pope's supremacy, and not suffer him to concern himself with any branches of his prerogative. This promise he undertook to embody in a Test that should be a greater security than the existing one, which he would have taken off. He offered besides to part with the greatest part of his dispensing powers and the greatest part of his army, and that the established religion should be inviolably preserved.'¹

Parliament had met in May, and was then prorogued till the autumn of 1685. 'Will you be in London on the 9th of October,' Sir William wrote to Southwell, 'when the Parliament sits; and help to do such things for the common good, that no King since the Conquest besides his present Majesty can so easily effect?'² He augured well of the personal disposition of the King; but he acknowledged his 'fear as to what men, drunk with rage and mad with revenge, might do of harm to themselves and others,'³ notwithstanding the good intentions with which he credited the new occupant of the throne. 'Pamphlets,' he wrote, 'are very rife, pro and contra, concerning religion; the clergy also, of all parties, are very busy concerning the same.' 'When anybody,' he told Southwell, 'would have you to be a Roman Catholic, a Papist, a Protestant, a Church of England man, a Presbyterian, Anabaptist, Quaker, fanatick &c., or even Whig and Tory, let them quit

¹ 'Notes of a Conversation between the King and Sir John Knatchbull,' April 1688, *Adversaria Miscellanea of Sir John Perceval*, Brit. Mus. Ad.

Papers, 27,989.

² August 22, 1685.

³ August 29, 1685.

all those gibberish denominations and uncertain phrases ; but make you *a list of credenda* and *agenda, necessary for your eternal happiness*, and give you the reasons for the same. This being done, let them give you a clear and sensible explanation of these words : viz. God, Omnipotent, Soule of Man, Soule of Beast, Church, Christian, Pope, Spirituall, Substance, Scripture, Reason, and Sense. For without these words you cannot *understand* these matters, much less can come into any conclusion.’⁴

Events in Ireland soon began to show clearly in which direction things were about to move. As soon as the failure of the movement headed by Monmouth and Argyle was assured, the Irish Roman Catholic party began to betray their real intentions. The corporations, partly by fraud and partly by force, were everywhere packed ; and every post the appointment to which lay in the hands of the Crown, from the Lord-Lieutenancies of the counties to the commissions of the smallest places, from Dublin and Cork to the remotest districts, fell into Roman Catholic hands. The repeal of the Acts of Settlement and Explanation and the practical expulsion of the whole Protestant population, were already announced as imminent by the more outspoken members of the party, of which Richard Talbot, now created Earl of Tyrconnel, was the daring and unscrupulous mouth-piece. But it was officially denied that such were the intentions of the King, and on the recall of the Duke of Ormonde, the special object of the hatred of the priests,⁵ who owing to age and infirmity was glad to retire from the scene of his long labours and avoid the coming storm, the Lord-Lieutenancy was conferred, after an interregnum of nine months, in December 1685, on the Earl of Clarendon, brother of the Lord Treasurer Rochester. Hopes were therefore still entertained that matters might not be pushed to extremes, and these hopes still continued, even when the command of the forces had been conferred on Richard Talbot, in June 1686, and the Irish Privy Council had been at the same time entirely remodelled.

⁴ April 1, 1686.

⁵ Burnet, *History of his Own Times*, iii. 72.

At the end of the year a pamphlet, entitled 'The Sale and Settlement of Ireland,' appeared, and attracted great attention. It was believed to be inspired from high quarters. The author was one David Fitz-Gerald. It impugned the whole Irish land settlement, made a series of bitter charges against the Duke of Ormonde, and accused Lord Clarendon of desiring to extirpate the Irish people root and branch. It was soon followed by another publication of a similar kind, called 'Queries on the State of Ireland,' written by Dr. Gorges and also aimed at the Duke of Ormonde and the Earl of Clarendon.

Sir William was urged to write a reply. He at first considered it was not within his province to do so. 'As to my answering the "Queries,"' he said, 'I say that my Lord of Ormonde and Lord Chancellor Clarendon's family are much concerned to satisfy the world as to the said "Queries;" and also the substance of the scandalous Treatise called the "Sale and Settlement of Ireland;" and that therefore it should be done by such hands as they think sufficient for it; by lawyers, skilled in Parliamentary and Prerogative Law; and such as are well verséd in the history of the wars of Ireland, and in all the transactions between the Phelym O'Nealians, Owen O'Nealians, Rinuccinians, and Clanricardians of the one side, and the Ormondians, Inchiquinians, and the Oliverians of the other side; or in other words between those who changed the Government, rebelled against the same, and would have extirpated the English name and Religion—whom we may in one word call "Rebells"—on the one side, and those who endeavoured to avenge the wrongs done to their King, countrymen, and religion, under the best Captains and conductors, which they could from time to time find, in direct pursuance of the Act made 17 Car. prim. for that purpose; whom in one other word we call "Patriots" of the other side.'

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He was, however, ultimately prevailed upon to write a memorandum in reply to Fitz-Gerald and Gorges, which he developed into a small book called '*Speculum Hiberniæ*,' the

⁶ September 8, 1685.

object of which was to set out in greater detail the conclusions to be found in the first chapter of the 'Political Anatomy of Ireland:' viz., that when all the circumstances of the case were considered, from the rebellion of 1641 onwards, the grievances of the great Roman Catholic proprietors were not what they had been represented, because those proprietors had deliberately courted the arbitrament of the sword, which had proved adverse, and nevertheless had been reinstated in a very large proportion of their possessions at the Restoration. Since then the steady growth of the prosperity of the country had left them, if with possessions in extent diminished, yet, all the circumstances considered, in a far more favourable position pecuniarily, owing to the increase in the value of land, than would otherwise have been the case. To overturn the whole of the Land Settlement would, he argued, not only be an act of injustice, but would once more plunge the whole country—the great need of which was security and order—into confusion. It would be far better to compensate the dissatisfied Catholics in some other way: for example, with grants of land in England, which would have the effect of strengthening the Roman Catholic interest there, an object which he considered equally desirable with the strengthening of the Protestant interest in Ireland, in order to prevent the supremacy of either denomination in any part of the two kingdoms. He also prepared a plan for the partial disendowment of the Established Church both in England and Ireland, in order to pay the Roman Catholic priests, and wrote three small tracts developing the same order of ideas; but it does not appear that, though privately circulated, any of them were printed or published.⁷

Already early in 1686, in a letter written to Southwell,

⁷ (1) *Speculum Hiberniæ: or, a Review of what has been lately Said and Suggested concerning the Titles of Estates in Ireland; of the Civil Wars there between the Years 1641 and 1653; and of His Majesty's Restoration; the Court of Claims, &c.*, 1686. (2) *The Elements of Ireland and of its Religion, Trade, and*

Policy, 1687. (3) *Another View of the same Matter, by Way of Dialogue between A. and B.* (4) *Another more True and Exact Narrative of the Settlement and Sale of Ireland.* Nelligan MS., British Museum. See Preface. Amongst the Petty MSS. are several papers which appear to be the rough drafts of the above.

after mentioning some particular cases of oppression which the Roman Catholics had complained of, he acknowledged that the situation had made great '*tourbillons*' in his mind; but, he continued, 'I retreat to the sayings following:—1. God is above all. 2. Few designs succeed thoroughly. 3. *Naturam expellas furcâ*. 4. The balance of knavery. 5. The follies of our enemies. 6. *Res nolunt male administrari*. 7. We shall live till we dye. 8. Time and chance, &c. 9. Another shuffling may cause a better dealing. 10. Fish in troubled waters. 11. Trees may grow the better for pruning. 12. Lets do what we can. 13. 'Twill be all one 2,000 y^{rs} hence. 14. *Una salus miseris nullam sperare salutem*. 15. Some other Bowls may drive the Jack from the Rest. 16. Playing at tennis in a wheelbarrow, etc.'

'The late new addition to the Council,' Southwell replied, 'is a new light which is very dazzling, and will need all y^r 16 axioms for consolation. . . . I wish it were as easy to find the cure as the disease. A consultation of doctors is scarce to be thought of; for such advising might be called combination, and so pass for witchcraft. Wherefore all I can at present think of, is to pray God that there may be from all good Protestants, such demonstrations of Loyalty, zeal, and affection to his Majesty's person and Government, that their enemies may not have credit in objecting that his authority is not safe in their hands, or that they are still the race of those who murdered the father.'⁸

Sir William still went on hoping against hope. He disliked the extreme Protestant interest, and he had suffered so much under preceding Councils, that he was inclined to take a lenient view of the present members, and could not help trusting that things might still not come to the worst, and that, as on other occasions, the sun might shine forth again.

'I will set all the Goblins, Furies, Demons, and Devils, which stand straggling up and down within this letter, in battle array,' he writes to Southwell on June 5, 1686. He acknowledges that he knows he is not 'a general favourite' and that Kerry will be 'a gnawing vulture,' and that he is himself

⁸ June 2, 1686.

ill and the cure not clear; 'to all which,' he goes on, his irrepressible spirits again getting the upperhand, 'I say—

"Hulchy, Pulchy, suckla mee,
Hoblum, Doblum, Dominee."

'I heartily join in your prayer,' he concluded, 'and you know that my studyes are how his present Majesty may even by and with his religion, do glorious things for God himself and his subjects; and trust his affairs in no worse hands than the maligned persons you mention, who will serve him upon demonstrable motives, not base assentation; and who saith, with our friend Horace,

' Si fractus illabatur orbis,
Impavidum ferient ruinæ.'⁹

Southwell, from London, again warned him of the serious character of the position, and against indulging in a foolish optimism based on the mere fact of Lord Clarendon being still nominally kept in office, while the real power was fast passing into the hands of Tyrconnel. 'I have known you formerly,' he said, 'to mind the cylinders, while your acres were tearing from you; and you would not desist from Philosophy as long as it was not in the power of a decree to forbid rubarb and Cena from purging.'¹

Sir William's natural inclination to make the best of what he could not avoid, and his evident disposition at the moment to put a favourable construction on conduct deserving the worst, was strengthened by the encouraging manner in which he was received by the King, who at this juncture accorded him an interview. His experiments in ship-building in the previous reign, it has been seen, had brought him into frequent relations with James during the time that the latter was Lord High Admiral. It would appear that James had learnt to place confidence in him, and the optimistic temperament of Sir William led him to desire to take the most lenient view that was possible under the circumstances of the intentions of the new ruler. On general grounds Sir William probably sympathised with the abortive attempts made in the

⁹ June 5, 1686.

¹ June 9, 1686.

previous reign by the late King to effect a general measure of toleration: efforts which had been defeated by the Parliamentary action of the Church and State party, in their blind hatred of the Protestant Nonconformists. Then had come the passage of the Test Act, when the popular fury had turned against the Roman Catholics; and by this Act the political position was further complicated, for it at once divided the advocates of religious liberty between those who simply desired to see the free exercise of religion, whether in private or in public, guaranteed by law, and those who wished also for the repeal of the civil disabilities imposed by the Act. This second party again was itself divided between those who desired to repeal the tests altogether, and those who would still have maintained the tests against the Roman Catholics, not as holders of unsound theological opinions, but as the champions of tenets inconsistent with the maintenance of the free institutions and the existing government of the country.

‘By liberty of conscience,’ Sir William said, ‘is meant the liberty of professing any opinion concerning God, angels, good and bad, the souls of men and beasts, rewards and punishments after death, immense space and eternity; concerning the Scriptures, the truth of their copies and translations; as also of their history; with the authority of their doctrines, precepts and examples; as also concerning the will of God revealed in any other ways. But not concerning the lives, limbs, liberties, rights and properties of men in this world; nor extending to punish or reward any man for sin or not sin against God; leaving offences against the peace and commonwealth of the nation to the civil magistrate, God’s visible vicar and lieutenant and true representative of the people, whether the same be in one or more persons.’²

In regard to England he saw no difficulty; but in the existing condition of affairs in Ireland, the free admission of Roman Catholics to power was, he thought, too dangerous an experiment to be tried as an isolated measure. His wish, therefore, was that ‘England and Ireland should be united by one Common Council, or Parliament, at the pro-

² Petty MSS. Notes on Religious Toleration.

portion of ten to one, without tests or embarrassing oaths, and that there be a well grounded liberty of religion in these Kingdoms such as may be depended on.’³

‘What is meant,’ he asked, ‘by Union between England and Ireland?’ He answered: ‘That the wealth of both peoples united will increase faster than of both distinct, and consequently that their revenue may also increase proportionally. That the Government of both united will be less expensive and more safe. That the enrichment of Ireland will necessarily enrich England, even in spite of statutes made to the contrary. That the prevention of rebellion in Ireland attainable by this Union is a benefit to England: former rebellions, and the last particularly, having been a vast prejudice to England. That the said Union will weaken the Popish power and party as well without as within his Majesty’s own dominions. That the King’s loss of Customs between the two kingdoms will be easily and willingly repaired by the same Parliament which makes the Union. That neither the prerogative of King nor the privilege of Peers, or of either House of Parliament in either kingdom, need to be lessened hereby. That there may be different laws, even in any of the parts of either kingdom if need be, notwithstanding the Union. That for want of a Union, even the Protestant and English interest of Ireland may, as it formerly hath done, in time degenerate, be estrayed, and rebel. That as Wales is an example of the good effects of a Union, so will Ireland be to Scotland, New England, and the other of his Majesty’s out-territories. That all his Majesty’s territories being united are naturally as strong and rich as the kingdom of France. That rather than not unite Ireland, ’twere better to dispeople and abandon the land and houses thereof, all movables, with the people, being brought away. The cause why the same hath not been hitherto done hath been indeed the vain feares of many, and the interest of but a very few, and these of the worst members of both kingdoms. That this Union cannot be thought a private project or intended for the particular or present advantage of any man. If it be an

³ ‘Ten tooles for making the Crown than any other now in Europe.’
and State of England more powerful Petty MSS.

evil thing to unite Ireland with England, it seems a good thing to colonize even England itself into many small kingdomkins as heretofore, and now in America and Africa, though nominally under one monarch. That this Union must be first transacted in the Parliament of England before it can be stirred elsewhere, and to be reckoned amongst the fundamentals of settlement and common peace. That a Union would *ipso facto* put an end to several dangerous and new questions depending between the rights of England and Ireland, to the disquiet of many of both nations, and which none dare determine. That poor and decaying persons of England always went for Ireland, and that the rich of Ireland always spent their estates in England. That the price of land hath fallen in England, even since the prohibition of Irish cattle, but will more probably rise upon the Union. That this Union is a probable means to get the real sovereignty of the seas, and to undermine the Hollanders trade at sea, and both without war and bloodshed. That if either nation did or should lose by the Union, yet even the loser, in justice, equity, honour and conscience, ought to promote and accept it from the other. That the late usurper and his party did hope to strengthen themselves by it.’⁴

He also recognised the growth of a set of Imperial questions, created by the rise of the colonies and dependencies, for which the established constitution hardly as yet seemed to provide any adequate answer; and in order to solve them he proposed ‘a grand National Council consisting of six hundred persons (being the greatest number that can hear one another speak), propounded not to be a Parliament nor to make laws, but to give his Majesty advice and information only, concerning husbandry, buildings, manufacture, money, navigation, foreign commerce, American colonies, and the natural recolt and consumption of the people. This Council,’ he said, ‘might consist of two hundred persons to be chosen by his Majesty as the very best landed men in England, and who receive the greatest yearly rent out of their lands, over

⁴ ‘Heads of a Treatise proposing a union between England and Ireland.’ Petty MSS.

and above legal charges and incumbrances particularly lying upon the same, viz. jointure, dowers, annuities, pensions, rent charges and extents upon statutes, recognizances and judgments; as also mortgages, children's portions, &c.; with liberty to any person who thinks himself unduly excluded out of the said two hundred to apply to his Majesty for remedy, and that his Majesty may every seven years thereof renew and alter his said election, according to the changes which shall happen in the landed estates of those who were first chosen. All the freeholders of England (of which certain lists are to be made and determined at the general assizes of each county) may choose one hundred persons out of themselves (whereas there are now chosen but ninety-three for the House of Commons) to make up the aforementioned 200 to be 300, and consequently half of the whole assembly of 600. Whereas there are now about 9,600 parishes, whereof some are enormously greater than others, it is humbly propounded to cut and divide so many of the said 9,600 parishes as may make the even number of 12,000 precincts or districts, and that in each district all the males of above twenty-one years old may meet upon a certain day to choose a certain person who may represent them as to the ends above mentioned, and that forty of the said 12,000 may meet at 300 convenient places (suppose seven days after their election) to elect 300 members for the Grand Council to make up 600 for the whole as aforesaid. The rules, orders, and methods of debate to be the same in this assembly, as in the present House of Commons.'

'Of all the Men in England of 21 years old,' he saw that 'although they have all Right and Capacity to be made Members of either House of Parliament, yet scarce one-fifth part of them have power to elect Members for the House of Commons; that 70,000 Persons, called London, send but eight Members, while 7 other persons send two, and some counties of equal Bigness and Wealth send ten times as many as others.' This also had to be altered. There were also a great number of other urgent administrative and financial questions, but the immediate 'Work for the

next Parliament in England' in his opinion was : ' To come to a full understanding with Ireland. To form a Grand and General Council for all the King's dominions. To make a new applotment of the public revenue. A new apportionment and election for the House of Commons. To restore the true use of seats and titles. To understand and allow liberty of conscience, and to level the rewards and punishments depending on religion with oaths, &c. To institute an account of lands and hands of all the King's subjects. To moderate the use and learning of the Latin and Greek tongues. To limit the City of London, to make the same a county and diocese and a bank. To lessen the sad effects of the plague in that City. To regulate coins, usury and exportation of bullion. To increase the King's subjects, and fully people his territories.' ⁵

In a letter to Southwell he gives an account of his interview with the King. ' As to the Great Man you mention,' he says, ' I had indeed strange access and acceptance. I spake unto him as one having authority, and not as the Scribes and Pharisees ; I said several soure things, which he took as juice of orange, squeezed into his mince meat, and not as vitrioll ; for some of the things I told him were these. 1. That all the lands which the Irish lost as forfeited, were not worth, anno 1653, when they left them, 300,000*l*. 2. That the 34,000 men, which the heads of the Irish were permitted and assisted to carry to foreign states, at 10*l*. p^r head, were worth more than the said lands ; that 10*l*. is not $\frac{1}{2}$ the value of negroes, nor $\frac{1}{6}$ of Alger slaves, nor $\frac{1}{7}$ of their value in Ireland. 3. I said that what the Irish got restored, anno 1663, more than what belonged to them, anno 1641, is worth more than all they ever lost. 4. That they got 1,110,100 acres of land by innocency, making 7 out of 8 innocent. He heard me with trouble and admiration. He press'd me to speak of the Settlement. I told him there were things in it against the Light of Nature, and the current equity of the world ; but whether it was worth the breaking I doubted ; but if it were broken by Parliament, I offered things to be

⁵ *An Opinion of what is Possible to be Done*, 1685. Petty MSS.

mixed with those Acts as should mend the condition of all men.’⁶

A few days later he wrote to Southwell: ‘I have been at Windsor, where I had private and ample conference with the King, who told me expressly and voluntarily that he would neither break the Act of Navigation in England, nor the Settlement of Ireland; that hee would never persecute for conscience, nor raise his revenue, but as the wealth of his subjects increased. I also conversed with some Grandees, who do seem to go close *hal’d*, and not quartering according to the best advantage of that wind, which so blew from the King’s gracious mouth. For my part I find the storme so great, that I cannot lay my side to it, but am forced to spoon away before it, without carrying a knot of saile, and yet believe that all things may do pretty well, if God be not very angry with us.’⁷

During one of these interviews the King, in confidence, gave Sir William copies of two papers found in the late King’s private chest, explaining the reasons which had induced Charles, and also the Duchess of York, to adopt the Roman Catholic faith.⁸ On another occasion he visited the King in his camp at Hounslow. There he found assembled a formidable force, which had at once become an object of suspicion. Sir William would, however, appear to have formed a favourable opinion of the sincerity of the King’s professions that what he desired in England was a measure, intended no doubt primarily to benefit the Roman Catholics, but to be made feasible by the inclusion of the Nonconformists. He was, however, unfavourably impressed by the atmosphere of the Royal Court, and could gain no clear view as to what plan the King had to secure toleration in Ireland, if the government passed into the hands of the Roman Catholic majority.

‘To leave our mimicks and ridicules,’ he wrote to Southwell, ‘what do you say to our lands in Ireland; to the

⁶ To Southwell, July 13, 1686.

⁷ September 30, 1686.

⁸ Copies are amongst the Petty MSS. See Clarke, *Life of James II.*,

p. 9, Orig. Mem.; Evelyn’s *Diary*, October 2, 1685; and Macaulay’s *Hist.*, ii. 44 (ed. 1856), on the general subject.

army, the Judges, Privy Council, and Parliament, which are like shortly to be there? Pray write me a word in earnest concerning the matter. How can we talk of being facetious, till we have burnt a candle upon these funest and lugubrious points?'⁹ 'If the Irish,' he proceeded, 'be now to the British as 8 to 1, and if they should be all armed as an army and militia, and the English disarm'd, and if the Irish should be the predominant party in all Corporations, may not the Kingdome be delivered up to the French? And that it would be, depends upon the motives on each side to do the same; which I leave to the consideration of our superiors, whom God direct.'¹

Apparently with the royal sanction, he drew up some propositions on the civil administration of Ireland for submission to the Lord Deputy, for as such Tyrconnel was already regarded.² They covered the points with which the reader is already familiar: the satisfaction of the leading Irish Roman Catholics by large grants from the Crown estates in England; the interchange of population by the encouragement of emigration from England to Ireland and from Ireland to England; the protection of the Roman Catholic minority in England and the Protestant minority in Ireland; complete liberty of conscience in both countries; and a statutory Union with an alteration of the representation and of the basis of taxation; and many other reforms in Church and State directly affecting both the prosperity of the people and that of the Royal Exchequer, which Sir William was never weary of insisting could be shown to be identical interests. He believed it would be possible by these means to turn the Irish into loyal subjects in nine years. Renewing apparently the set of proposals which he had made in the latter years of Charles, he undertook to carry out several of his own plans, if

⁹ May 12, 1686.

¹ September 19, 1686.

² A great number of papers, mostly in a very fragmentary condition, exist on these topics amongst the Petty MSS. The most important are: 'The Scope and Designe of the Papers

delivered to the Earl of Tyrconnel, 12th May, 1686, in Order to an Accommodation;' 'Papers concerning Sir William Petty's Project of getting Himself Appointed Surveyor General and Accomptant General of all his Majesty's Dominions.'

appointed Surveyor-General of the kingdom, and placed at the head of a statistical office, to combine the functions now discharged by the Ordnance Survey and the Census, and he once more set out the advantages which would thereby accrue to the Revenue and the nation.

His plans were the occasion of a squib, in which he was described as enumerating the heads of an agreement with the King for a reform to be introduced into every public department, and concluding by demanding that all necessary powers were indeed to be lodged in the King and his Ministers, but that the partners 'by an under hand writing were to convey them all to Sir William Petty, and to make him President.'³ 'Dear Cousin,' Southwell wrote to him from Kings-Weston, 'I have read yours of the fourth and have read the papers enclosed, which are either for transplanting or propagation. The things are mighty, and call unto my mind that when Paul reasoned of righteousness, temperance, and judgment to come, Felix trembled. You know Columbus made the first offer to us of his golden world and was rejected; that the Sybil's books, though never so true, were undervalued; and Mr. Newton's demonstrations will hardly be understood. The market rule goes far in everything else. *Tantum valet quantum vendi potest*. Soe altho' I do not suspect you can be mistaken in what you assert, since you enumerate so many solid as well as bitter objections, yet the dullness of the worlde is such, the opposers soe many, your fellow-labourers so few, and your age so advanced, that I reckon the work insuperable.

'However, I am glad that your thoughts are all written down for posterity, as favoured by accidents it may cultivate what the present age neglects; and in the meantime since you purpose to entertaine the King on these subjects, lett me advertise you what his goode brother once said at the Councill Board "that he thought you one of the best Commissioners of the Navy that ever was, that you had vast knowledge in many things; but," said he, "the man will not be contented to be excellent but is still ayming at impossible

³ Petty MSS.

things." You know I am in possession of saying any thing to you that comes into my head, but this I say for your service : that being already advanced in his Majesty's opinion for things that he comprehends, you doe not growe lesse by going beyond his reason.' ⁴

Sir William, however, remained unconvinced. ' Standing upon mine own integrity,' he tells his friend, ' I will (1) except against several of your doctrines. (2) I will plead not guilty to some of the faults you suspect me of. (3) Others I can excuse and attenuate. (4) I will shew how my practice doth and hath complied with many of your documents. (5) I will heartily call *peccari* upon most of the other points.' ⁵

But Sir William had soon to recognise that rougher hands than those of the economist and the statesman were wanted by the King for the task in hand. As might have been anticipated, ideas of administrative reform and religious toleration found no supporters in Tyrconnel and his military and ecclesiastical coadjutors. The mask was thrown off and the party of moderation rudely brushed aside, notwithstanding the advice of the Pope, Innocent XI., who took a truer measure than his English advisers of the strength of the Roman Catholic party, and dreaded the supremacy of France in Europe, which an alliance between James and Louis XIV. would have secured. It was now hardly concealed that the expulsion of the Protestants was the object of the new Irish Administration. Surrounded by Jesuits, influenced by the Queen, and probably failing in health, the King abandoned the English in Ireland to the vengeance of his importunate and overbearing Deputy. Louis XIV. had given up the Huguenots to the tender mercies of Madame de Maintenon and his confessor. The example was attractive, but James forgot that the circumstances were not the same.

Sir William had now begun reluctantly to realise how extreme was the danger, though he still obstinately hoped something from the good intentions of the King. Caution and a careful observation of the times were, he thought, for

⁴ August 13, 1686.

⁵ December 13, 1686.

the moment the best policy. If necessary, though now an old man, he would try to begin life over again and seek to restore his fortunes. But for the first time in his life he began to lose hope about the prospect in Ireland, where all seemed in utter jeopardy.

‘Let us have patience,’ he wrote to Southwell in October, ‘till our browne necks retorne into fashion ; nor venture upon any necklaces that will strangle us, and that we cannot unty when we please.’⁶ ‘I am sorry the Rocks whereupon I have formerly split, must be shaken down by a general earthquake. The posts which supported us were rotten and painted; you must not wonder that they should moulder away. . . . For, briefe, I am beginning the world again, and endeavour instead of quarrelling with the King’s power, to make him exert all he hath for the good of his subjects.’⁷ In the course of the next month he writes: ‘I tell you again, that I heard nothing from the King contrary to what he was before graciously pleased to tell me, concerning the settlement; but say as I formerly said that others go very close *hal’d* upon that wind. When I told you I would begin the world anew, I meant that I would take a new flight, and not any more from Irish grounds. I behave myself towards great men as cautiously as I can, and repent of my former methods. . . . I have matters under my hands; and do study how to proceed humbly with them. . . . The King told me last week that my Essays were answering in France;’⁸ and I am told by several others that the mightiest hammers there are battering my poor anvill &c. In all these cases I hear an old voyce, “Tu ne cede malis, sed contra audentior ito.”’⁹ ‘I do not wonder,’ he wrote to Southwell in the same month, ‘at your apprehensions, because I take them to be very like my owne. I cannot tell what to say that may sweeten them. I find no man doubts but that the Chief Government of Ireland, the Benches, the Officers, and soldiers also of the Army, the Commissioners and Collectors of the Revenue, the Sheriffs and Justices of the Peace, the Magistrates of Corporations, and the

⁶ October 26, 1686.

⁷ November 6, 1686.

⁸ The *Essays on Political Arithmetick*, Second Series.

⁹ November 1686.

officers of the Courts and Christ Church itself, to say nothing of the college of Dublin, will shortly be all in one way. Whether toleration be intended to Dissenters, I know not ; but find some bitterly against it, altho' the King hath most expressly told myself the contrary, with as good arguments as can be used for that purpose. It is manifest that a Parliament will be called there. It is said that a New Warrant will be forthwith brought against the Charter of Dublin, and consequently against many more, to make all things fit for "the great work." Some also say that Poynings' Law shall be dispens'd with, and bills directly pass'd as here. I hear that 2 or 3 of the new form'd Irish regiments shall be brought hither ; and that 3 English regiments shall in lieu of them be carried from hence thither. We hear that many of the most considerable persons of Ireland will come away with my Lord Clarendon ; and that there are thousands coming away already ; the violences in Ireland of several sorts being so many and unpunished ; the consideration whereof doth make poor people even of London weep. Dear Cousen, when I first treated with a great man, things were not near this rapidity ; but I saw an Eddy in that Tide (tho' indeed strong enough), wherewith with pains one might rowe ; and I had prepared oars for that purpose, that is to say, innocent and beneficiall designs for the good of mankind, which I had contrived should have been driven on by the same current that was likely to drive on worser things for myself. I yet stand fair with many, but fear as I told you in my last, that my cakes will never be baked.'¹

In January 1687 Rochester was deprived of the office of Lord High Treasurer, and Clarendon of the Lord-Lieutenancy of Ireland. Tyrconnel became both Lord Deputy and Commander-in-Chief, with powers practically unlimited. The English Parliament had been prorogued in November 1686, and had not since met. James decided not only to introduce religious toleration and freedom of worship, but also to abolish tests, and to carry out all these steps at once by virtue of the royal prerogative, 'making no doubt,' as he said

¹ January 18, 1687.

in the royal proclamation which announced his policy, 'of the concurrence of the two Houses of Parliament, when we shall think it convenient for them to meet.' Meanwhile the dispensing power would be exercised to relieve all persons coming within the penalties of the Acts. In Scotland a bolder policy still was adopted. There the royal prerogative was claimed as sufficient to deal finally with all such questions. In Ireland Tyrconnel was given free powers to pack the Parliament which was about to be summoned, and secure a favourable verdict as a preliminary to still larger measures.

In the expressions of the fateful Declaration of Indulgence issued by the King the echo of some of Sir William's economic ideas may perhaps be detected. The Declaration states the King's unalterable resolution to grant freedom of conscience for ever to all his subjects, rendering merit, and not a compliance with the Test Act, the condition of the tenure of office; experience had shown the impossibility of constraining conscience, and that people ought not to be forced in matters of mere religion; and liberty of conscience would add to the wealth and prosperity of the nation, and give to it what Nature designed it to possess—the commerce of the world.²

In July 1687 the English Parliament was dissolved, and it was determined to spare no effort to bring together a more subservient assembly to carry out the royal wishes. The words of the royal Declaration were fair, and if the questions involved had affected England only, it is possible that the result might have been different from what it proved to be. But events in Ireland decided the issue in England. It soon became clear that there, whatever the private views and wishes of the King might be, Tyrconnel was the real ruler, and that the King was powerless to protect the lives and property of his Protestant subjects from the vengeance of their hereditary enemies. Nor could it escape attention that, even in England, Roman Catholics were everywhere being promoted

² See the text of the two Declarations of April 4 and April 27, as given in Cardwell's *Documentary Annals of*

the Reformed Church of England, ii. 359–66.

to places of trust and emolument, from the highest to the lowest, in numbers altogether out of proportion to their position in the State, and that a huge army was being collected in the neighbourhood of London, at a moment when there was no reasonable apprehension of a foreign war, and therefore with every appearance of being either intended to overawe the country, or of being used to co-operate with France in a fresh attack upon Holland—which, if successful, would be followed by the suppression of Protestant liberties in England. Meanwhile the country was full of refugees flying from persecution in France, and the conviction slowly forced itself on the public mind that, whatever might have been the case in 1678, a conspiracy against the liberties of the nation was now on foot, and that the King was conniving at it, if not himself the actual instigator.

CHAPTER X

DEATH OF SIR WILLIAM PETTY

1687

Capture of Kenmare—Directions to Lady Petty—Recollections—Coat and Armes
 —Criticism of Pascal—Views on education—Instructions to his children
 —Edward Southwell—Newton's 'Principia'—Sir William Petty's death—A
 political prophecy—On mourning for the dead—Monument in Romsey Church.

'O God, Cousin,' Sir William writes in March 1687 to Southwell, 'how doth my foot slip, when I consider what Providence hath winked at in its dispensations of Ireland!' ¹ The news which had arrived from Kerry was of the most serious import, as it announced that the native Irish had commenced a series of attacks on the Protestants; that Lieutenant-General Justin Macarthy had been made Governor of that County and Sir Valentine Brown Lieutenant-Governor, both of them noted adherents of Tyrconnel. The colony at Kenmare at once became the object of special hostility. The surrounding population drove off the cattle, 'plundered haggard, barn, and granary,' and carried off even the goods and provisions in the houses. These outrages being evidently winked at by the authorities, the colonists decided on retiring to Kilowen House, situated on a kind of peninsula at the head of the Bay of Kenmare, which they fortified. Thither came in forty-two families, consisting of 180 persons, among whom were seventy-five fighting men. 'They had four blunderbusses,' says the author of an account by one of the party, 'forty muskets, carabines and fowling pieces, twenty cases of pistols, thirty-six swords, twelve pikes and six scythes, with 170 lbs. weight of powder, and a proportionable quantity of ball. They encompassed half an acre with a clay wall fourteen feet

¹ March, 1687.



high, which lay round the house, and twelve feet thick, and fortified it with flankers in the manner of an irregular pentagon, in which work they were assisted by 150 of the natives that lived amongst them; and they erected small huts of planks within the wall, in which some of the families lodged.' They made Mr. Orpen, Sir William Petty's agent and clergyman of the place, who combined the duties of Judge of Admiralty for the western coast with his ecclesiastical functions, their leader, and they entered into a



WHITE HOUSE RUIN, KENMARE

solemn association to stand by one another in defence of their lives, religion, and liberties. These proceedings, the narrator of these events quaintly observes, 'greatly disgusted the neighbouring Irish.'² Success rewarded their early efforts. They made an attack on the known leaders of the recent robberies and captured six of them; but the prisoners, although seized under warrants of Lieutenant-General Macarthy, were almost immediately released by his direction. All further

² Smith's *History of Kerry*, ed. 1756, p. 319.



disguise as to the sympathies of the representatives of the law were soon at an end, for on February 25, Colonel Phelim Macarthy himself attempted to surprise the garrison at night. Failing in this he next day summoned the place, in the name of Sir Valentine Brown, to surrender, with a promise of good conditions, but threatening them with fire and sword if they held out. They were at the same time informed that all the Protestants in Cork had been disarmed, that Castle Martyr had surrendered, and that Bandon was about to do so. Finding resistance hopeless, the little garrison surrendered on honourable terms, security for life and property being promised. But hardly had the surrender taken place, before the native Irish rushed in, and, having plundered the house, turned out the occupants in a miserable and starving condition. It is probable that all would have perished, but for the fortunate arrival at this moment of two small vessels, which Mr. James Waller, foreseeing trouble, had despatched into Kenmare Bay. On board these vessels all the fugitives crowded, with the exception of eight, whom the officers of Captain Macarthy's force compelled to stay in order to work in the iron-mines. But the troubles of the fugitives were not even then over; for the native Irish, encouraged by their success in plundering some French Protestant refugees who had been driven by stress of weather into the bay in 1685, succeeded in carrying off the sails of the vessels. A delay of eight days took place in consequence, and an order then arrived from Captain Hussey, representing Sir Valentine Brown, prohibiting a journey to England. Mr. Orpen thereupon passed a bond for 5,000*l.*, to be forfeited if they did not go to Cork, considering this a cheap price to pay for life and liberty. At length, with only five barrels of beef, forty gallons of oatmeal, and some unbaked dough, the little party was allowed to embark. The masters of the barques knew nothing of navigation, but the gentlemen on board were able to shape the course. They made for Bristol, but the winds were contrary, and they did not arrive till March 25, 1688, and in so miserable a condition that the mayor ordered collections for their relief. Many of the party

died soon after landing from the effects of cold and exposure. The survivors went to London and were hospitably entertained by Lady Petty.³ Sir William they found had died a short time before.

When, in 1687, the serious position of the little colony at Kenmare first became known, Sir William was in his sixty-fifth year, and the labours and anxieties of his career had already begun to impair his strength. The change in Ireland was an almost intolerable blow to him. It seemed as if his life-work had been destroyed, and the catastrophe was the harder to bear because he could not well believe—in spite of his natural buoyancy of temperament—that he could live to baffle his enemies himself, even if those who came after him might succeed in doing so.

A troublesome disease in the feet, apparently some complicated form of gout, now partially lamed him. His health was shaken and the conviction that his end was not far off was constantly present to his mind, and he commenced putting his house in order, so far as events permitted, against the arrival of ‘the horse bridled and saddled,’ which he thought was soon to carry him off.

Already in 1684 he had written from Dublin to Lady Petty that ‘he had rummaged and methodized his papers,’ which amounted to ‘fifty-three chests,’ and are, he says, ‘so many monuments of my labours and misfortunes.’⁴ He also completed the full and detailed account of the ‘Down Survey of Ireland,’ to which frequent reference has been made in this narrative. ‘I shrine all up,’ Southwell told him, ‘and premise that in after times, I shall be resorted to for your works, as Mr. Hedges is for the true *Opobalsamum*.’⁵ ‘As to your fifty years’ adventures, I have them and keep them more precious than Cæsar’s Commentaries.’⁶

To Lady Petty, Sir William also sent a summary of his claims on the nation as a legacy to his children.

³ *Losses sustained by the Protestants of Kenmare*, 4to. London, 1689; Smith’s *History of Kerry*, pp. 317–320.

⁴ Southwell to Petty, September

11, 1682. The letter quoted in ch. i. belongs to this series.

⁵ Southwell to Petty, September 11, 1682.

⁶ *Ibid.*, November, 1686.

Sir William to Lady Petty.

‘Do not, my dearest, too much despise the enclosed to our boys.—We have Acts of Parliament for a reward to the Survey; authentic accompts of our Wearys in Kerry; the hands of Lord Halifax, D. of Ormond, and L^d Rochester, for the revenue; and the laws of God and Nature for the shipping. Meethinks your gossips should instead of silver spoons, help their gossoons upon these matters. Oh! God how many Offices, Rewards and Titles, have been bestowed these last hundred years for lesse merit. You may show the enclosed letter, (not to every body), but where it may do noe harme, if noe good. Meethinks these 4 cows should yield some milk this next summer, to make butter for the present, and cheese for the next age. Gods will be done and lett me be satisfied with the “consciencia rerum gestarum” and expect noe more.’

ENCLOSURE.

‘Deare Children,—Your father from his Infancy tried many ways to raise an Estate for you and a faire name in the world; and among the rest he did in the year 1655 measure Ireland, viz. as much line, in 13 months, as would compasse the globe of earth neare six times about: of all which many records and Books, confirmed by two Acts of Parliament, doe remaine.

‘He hath suffered a loss stated by the King’s Auditor (in concernments of Kerry above all other the King’s subjects) about 20 thousand pounds, by the folly and malice of flatterers.

‘He hath propounded a demonstrable way of advancing the King’s Revenue about 10,000 pounds per ann: with the benefit, ease, and accomodation of all his subjects in Ireland; tho’ not yet embraced.

‘He hath made so many modells and experiments on shipping within two and twenty years, and at 1,500*l.* expense of his owne money and 3,500*l.* of other friends, and has begotten the enclosed opinion concerning shipping.

‘The Reputation and Recompense due to these performances by the King and Country, I hereby bequeath to you, *hoping you will not do lesse nor worse* in the stations wherein Providence shall place you.

‘Yr careful Father W. P.’⁷

[Here follows an account of a ship designed to be built in a particular manner.]

But his mind travelled back as well as forward, and in some letters to Southwell he enshrined a pithy account of his early struggles.

‘*June 12, 1686.*—I have drawn out a paper shewing what money I had Xmas 1636, which was 1s. ; how it *riss* to 4s. 6d. ; then to 24s. next to 4l., then to 70l., next how it fell to 26l., then riss to 480l. at my landing in Ireland ; next to 13,060l. at finishing the Survey ; and how after I got my land in Ireland and Estate in England &c., it was 3,200l. at the King’s Restoration ; and so all along to the present day. Perhaps the like hath not been seen. This and the like gave me the courage wherewith I have fought Zanchy. *Whatever becomes of me, I can leave such arguments of arts and industry as will be a credit to my children and friends.* And now I say, naked came I into the world and naked must I go out of it.’

‘*July 13, 1686.*—Concerning myselfe, I say that I had £13,060 in cash, anno 1656 ; which at 10 per cent., above 12 being then justly taken, would, anno 1666, have been £26,120, and anno 1676, £52,240 ; and in the yeare 1686, £104,480. I further say that without meddling with forfeited lands, I could, anno 1656, have returned into England and been at the top of practice in Oliver’s Court, when Dr. Willis was casting waters at Alington Market and the Cock louse was but an egg.⁸ And what the superlucration thereof, besides the £104,000, might have been in 30 years, I leave to your judgement. I say the profit of these two funds would have exceeded my present estate.’

⁷ June 1684.

to one of the leading practitioners of

⁸ This is apparently an allusion to the day (see below, p. 296).

‘*July 17, 1686.*—I said in mine of the 13th instant, that after I had with £13,060, and £4000, bought my Irish lands, built Lothbury, and married my sister, I had at the King’s restoration £3,200 left. Then you have had the Debtor: now the creditor side. 1. My troubles with Zanchy, the Rump, and the Army, 1659. 2. The 49 mens siege of my Limerick concernments, and Sir A. Brodrick, 1661–2. 3. The Court of Clayms and Innocents, 1663. 4. The great double bottom, 1664. The Plague, 1665. L^d Ranelagh and Fire of London, 1666. 5. Warrs with L^d Kingston 1667, 68, 69, 70, 71 & 2, when W. Fenton died. 6. The rebuilding of London; years value; Iron works, and Fisheryes defray, within the said year and 1672. 7. Reducement of quit rent and Sir G. Carteret 1673 and 4. 8. Sir James Shean and partners; and Kerry, 1675, 76 & 77. 9. Kerry custodium & imprint, from 1678 to 82. 10. More mischief about the same and stopping the law to 1685. 11. The fright of 1685 and 1686, with faylure of Rents. 12. Strange wrongs from paupers set up on purpose to plague me.

‘Now to what my said £3,200, anno 1660, is shrunk to ann: 1686, I leave to consideration. Think also of my 53 chests of papers containing an epitome of my services and sufferings; my Bookes and survey, and Copperplates, with the accurate and authentic History thereof and the first distributions; what I might have gotten without the least meddling with Irish estates, as from first letters; how little I have gotten by religion and factions; how I have been industriously oppress and suppress 27 years; was never the Toole or Turnshovell to any person or party; never convicted to have wronged either private persons or public interests—but have gotten all, as I did the first 1s., 4s. 6d., 24s. and 4l.—Dear Cousin adieu.—When I am dead pick me out an epitaph out of these 3 letters, and let my children be ashamed of it, if they dare; but out-doe it. What anatomy I have made of myself, I am able to make also of my enemies. I have herein followed the advice which Sir P. Pett heretofore gave: viz. That at the country feasts every man (when he was near drunk but not quite drunk) should disclose to the company the real cause of

his coming to Ireland. So lett (I say) a dozen others whom I can name, tell to the next Powers the cause of their coming to their estates: I say to the next powers; for the last powers that gave them were but the summer; the next may be the winter, and frost nip them. I have already past the summer and winter both, as I told Sir George Lane, upon occasion given. Again, adieu.'

July 31, 1687.—'I told you that in Sep. 1652, when I first landed in Ireland that I had £280 in cash, and £120 out of Brazenose; the Anatomy Lecture of Oxford; and Gresham College; and that I had £365 p^r annum salary, and the value of £35 per annum more out of the State's *apotheca*: in all £520 per annum, besides my practice (which tho' it were not in those days like Willis, Lowse, or Short's) made my superlucration full £800 a year; which for 4½ years, to Xmas 1656, was £3,456; which made my aforementioned £480 to be £13,060, as in my letter; which is about £2,176 p^r ann., a sum which Boys have gotten in the late offices, and which I have only had for measuring the whole world with the Chain and Instrument for near 6 times about, the monuments whereof are to be seen in the Survey. . . . I have indices and catalogues of the gross wrongs I suffered between 1656 and 1686 by the Anabaptists, Presbyterians, and the 49 men, with the rest of the "drinking" interest,⁹ till the present time, which I conceive the new expected Powers cannot well outdo. Notwithstanding all I have said, I apprehend it will be said to me:

Pro te non plurima . . .

Labenti pietas, nec pro te vota valebunt.¹

Nevertheless, I will endeavour to leave in some good hand wherewith to shew I have deserved a better fate; that I am no mushroom, or upstart; but that my estate is the oyle of flint, and that "ut apes feci geometriam."²

Illustrating this last adage, he had devised a coat of

⁹ The allusion is not clear.

² The letter quoted in chap. i. p. 3,

¹ The quotation is partly from Virgil, *Æneid*, ii. 429 :—

July 14, 1686, belongs to the above series.

nec te tua plurima, Panthu,
Labentem pietas nec Apollinis infula texit.

arms, and wrote some verses upon it, which young Edward Southwell carried off to his father. 'To vindicate myself,' Sir William writes to the latter, 'from wildness of imagination in the Scutcheon and verses which were sent you, I further add by way of explanation viz., that I would have those Emblems and Symbols rather called my Coat *and* Armes, than my Coat *of* Armes; for what is signified are indeed my Coat, Covering, Shelter and Defence; viz.:

Cæruleus candore nitor mea scuta decoret,
 Non atrum aut fulvum nec cruor horrificet,
 Stellam ut spectat avis, positoque tremore quiescit,
 Sic mens quæ spectat sola quieta Deum.
 Mella ut Apes condunt, sic scire geometra quærit,
 Utile quærere apum est; scire geometriæ.
 Sedulus ergo ut apes feci geometriam, ut inde
 Utile cum dulci scire et habere queam.
 At si perdam ut apes quæ per geometriam habebam,
 Heu vos non vobis mellificatis apes.

And thus,' he concludes, 'you have my field of azure, my magnet, my star, my Pole, and my beehive expounded.' ³

Sir William was constantly occupied with the education of his sons, Charles and Henry. In regard to his daughter Anne, who appears to have inherited much of her father's talent for business and to have been a favourite child, he expressed a hope in writing to Southwell 'that one day Arithmetick and Accountantship will adorn a young woman better than a suit of ribbands, to keep her warmer than a damnable dear manteau.' ⁴ Charles was Sir Robert Southwell's godson. He was sent abroad about this time to see the world. 'The end of Charles' travels,' Sir William writes to Sir Robert, 'is not to learne French, Latin, nor Arts nor science, but to learne a competency of Teutonick and Italian; to see "mores et urbes multorum hominum," to shift among dangerous men, to be a frugal accomptant and manager reipublicæ suæ; to distinguish friendship, civility, and flattery; and lastly, ad faciendum populum, to make fools believe he is more than he is, as to appear something at the University

³ August 7, 1686.

⁴ To Southwell, December 4, 1685.

after he comes home. Wee do not hope he shall make an interest with the great men abroade; but are content if he know their persons and can talk of them, and have their names in his album.'

To Sir Robert's regret, Charles appears to have inherited the faculty of imitation from his father, for Sir William, who had been evidently again put on his defence, continues as follows: 'As for the mimicall faculty I say that it was never planted by me, but one of the weeds mentioned in my former letters, and which I want pulled up by the roots. I never sent him to the Playhouse to be instructed in either tragic or comicall Recitations or Acting; nor is he a frequent spectator there, but when he is, he doth oftener offer to correct, than to applaud their performances. I doe neither indulge him in it, nor doth he value himself upon it; tho' I am much pleased 1. that he discerneth the persons who are fit matter for the stage. 2. That he readily picks out the genius, words, action, voice and tone, of any mimicable man, and can turne them to sample them. 3. That when he sees anything written, he can without art or industry, but by nature and instinct, adapt an action, speech, voice and tone, suitable to the matter and shape thereof. 5. That he can execute a just and judicious punishment and revenge on his enemies by this faculty. 6. Make himself loved by women, feared by men, at once.

'N. B.—He is taught to be careful in ridiculing nations, great posts of men, and coxcombs in commission, without a stake proportionable to the hazard thereof; and must prepare himself to justify by the sword what he justly does in this way. His sister hath a dash of the same.'⁵

'Your Godson Charles,' he tells Southwell, 'grows like a weede without much culture or help of the gardeners. Perhaps it may be never the worse, for the race will not be to the swift, nor the battle to the strong. Nor will favour go to the men of skill, or bread to the men of understanding.'⁶ 'Henry,' he says, 'is more for the bar than the stage. His talent is in stating arguments impromptu, pro and contra, for every thing he meets with. In short I lett

⁵ April 8, 1686.

⁶ December 4,

nature work with them all, and plant no clove nor cinnamon trees upon them, but am content with the roses, peas and violets, and even with the hemlocks, nettles, and thistles, that grow vigorously. The one please the taste and smell of their friends, and the others sting, prick, and poison their enemies.' ⁷

Sir William was much interested at this time in a paper of Pascal's on a definition of ability, disagreeing from his views, which Sir Robert Southwell supported. He tells his friend to let the question alone till he comes to town, and promises that he 'will then roast him and Sir James Lowther on one spit.' 'As to Pascal's paper whose name I honour,' he goes on: 'I must say as followeth viz. 1st, That there be many words, phrases and sentences in it, which have not a certain, sensible signification; and therefore cannot beget any clear notion, sense, or science in the reader. 2nd, He distinguisheth witts only by their learning or aptitude, either for geometry, or sagacity: whereas I think the best geometricians were the most sagacious men, or that the most sagacious men did ever make the best geometricians. Wherefore the distinction of Witts is not well made by those words, which are but the cause and effect, and consequently the same. 3. He maketh the difference of the great achievements made by the severall great men undernamed to have depended upon, either their making use of many or few principles, whereas the words "many," "few," have noe real difference, no man being able to say whether the number ten be many or few, or be a small or great number.

' Those I would name among the

Ancient are :		Modern are :	
Archimedes	Julius Cæsar	Molière	Sir Francis Bacon
Aristotle	Cicero	Suarez	Dr. Donne
Hippocrates	Varro	Galileo	Mr. Hobbes
Homer	Tacitus	Sir Thomas More	Descartes

' Whereas the good parts of men are in generall :

' 1. Good sense.

' 2. Tenacious Memory of Figures, Colors, Sounds, Names, &c.

⁷ April 8, 1686.

‘3. A quickness in finding out, matching and comparing ; as also in adding and subtracting the *Sensata* layd up in the Memory.

‘4. A good method of thinking.

‘5. The true use of words.

‘6. Good organs of speech and voice.

‘7. Strength, agility and health of Body and of all its parts.

‘The severall achievements of the severall great persons above named, have proceeded from the just and proportionable applications of those last mentioned faculties to severall matters and ends.

‘I have now given you a description of what I call good parts, which I resemble to the severall colours upon a Painters pallet, out of which any colour may be made by composition. And I say that I can out of the ingredients before mentioned make you an Archimedes, a Homer, a Julius Cæsar, a Cicero, a Chess player, a Musican, a Painter, a dancer of the Ropes, a courageous spark, a fighting fool, a Metaphisicall Suarez, etc. And I would faine see how, out of Mr. Pascals grounds, viz. of aptitude for geometry, or sagacity, and the use by many of few principles, the same can be performed ; and how thereby all the above mentioned species of transcendental men can be produced.’^s

Charles Petty was abroad in 1686. ‘I am glad,’ Sir William wrote to his godfather, ‘that wee agree that the main end of travelling is to learn frugality, circumspection, discreet jealousy, and generall prudence ; with such Behaviours as will adapt us for conversation with all mankind—without laying much weight upon Languages, University Arts and Sciences—and Interest in the famous men of other nations. As I did, Deare Cousin, venture to fall upon the great Pascal, soe I shall now again venture to set down some of my thoughts on the faculty of Imitation, which you think soe ill of, and I say viz. : 1. That no man can be a good Painter without a perfect faculty of imitating all colours, figures and proportions of magnitude. 2. Noe man can be said to sing well or to

^s British Museum, Egerton MSS. ; also among Petty MSS. The paper referred to is to be found in the Ap-

pendix to the *Pensées* : ‘Différence entre l’esprit de Géométrie et l’esprit de Finesse.’

learn the same happily, that cannot readily imitate all the sounds and tones of voices hee heareth. 3. No man can danse well or fence well, that cannot readily imitate all the motions which are taught in those exercises. 4. No man can be a good orrator that cannot attune and put on all the miens, looks, gestures, and appearances, which attend the passions that he would excite in his hearers. 5. Representation, or the art of making absent Persons and things present, as often as is requisite—this is imitation, monstration, or demonstration of persons and things. These are the only Mimicks that I like in my children, applied to good uses and not to hurt neighbours. If this be crooked timber, instead of straight, we must dispose of it to shipping—and beast hooks. I suppose you do not blame mimicking in this sense, but rather mean the act or practice of ridiculing any person or thing and making the same vile and contemptible, which faculty who is master of, saith your author, Clerambault,⁹ is master of the world. I incline to this opinion, notwithstanding what you say of the D. of Buckingham, whose case requires a special Essay. For why do you learn to ride the great horse, but to trample down your enemies? Why to fence, but to disarm or disable them? Why do you affect great offices, but to make men subject to you and to become low and weak, in comparison of yourself? Yet in all these cases you are not certain of victory, but only encouraged to fight upon occasion; nor doth it follow that whoever can ride or fence and shoot and wrestle, is thereby made more apt to offend or wrong his friends, but rather to defend himself against wrongs, by the reputation that hee can repay them. Now if the art of ridiculing be used as aforesaid, where is the evil, when it is only another more manlike sort of fighting; whereas in the other sort of fighting, beasts commonly excell men? I have expounded the faculty of mimic or ridiculing: there is another between them, which is, not to make men laughed at, but to be facetious; that is to make the generality of men laugh, without offending any, but be conscious of their owne fault; of which more hereafter.¹

⁹ The allusion is not clear. Clerambault, the celebrated musical composer, was only born in 1676.

¹ May 4, 1686.

Among the various studies which Sir William encouraged his children to pursue, law, notwithstanding his dislike for the practitioners of it, bore a prominent part. Perhaps he regretted not having had a more intimate knowledge of it himself. At Christmas 1685 we find it used to introduce a kind of family diversion, possibly to gratify the disputatious talents of Henry Petty. ‘As you tell us,’ he writes to Sir Robert, his old humour breaking out for a moment through the gloom, ‘what excellent exercise Neddy and the fair spinsters are employed upon, so I tell you that my two sons are busy upon the Law. Harry is the Lions Attorney General, and counsel for most of those whom Reynard has wronged; and Charles is of counsel to Reynard, to defend him against all accusations. I will not prejudice you to be of either side; but will only give you a list of the principal points which will come in question: viz. whether Reynard conspired with the Carpenter that wedg’d Sir Bruin into the hollow tree; about the murder of Dame Coppett, whether she was a sorceresse and intended to poison Reynard; about the great trepann upon Kynward, so as he lost his life; what kind of action Curtis may bring against Reynard for the pudding taken from her; whether the earth of Malepardus be a privileged place; and whether replevin will not lye for the goods which Reynard hath lodged in it;’ and so on under thirteen heads of legal quip and joke.²

The following instructions to his sons were also written at this time:—

‘Directions for my son Charles, 7 July 1686.

‘To pursue dansing, fencing, and riding; to fence in public, if you do well; otherwise not.

‘To pursue the flute and sing justly.

‘To write fair, straight, and clerklike.

‘To practise Arithmetick upon real business that shall be given you.

‘To copy flats, and draw after round and dead life.

‘To dress yourself well without help.

‘To carve at table and treat friends and strangers.

² Dec. 31, 1685.

‘To pitch upon ten good families, whereupon to practise civility and conversation.

‘To heare 4 or 5 of the most eminent preachers.

‘To go to plays, and learn the company, as alsoe to the Drawing room, St James Park, Hyde Park, and balls.

‘To know the seats upon the river of Thames, between Windsor and Greenwich, and within 6 miles of London Bridge.

‘To know the alliances of all the noble families, with their friends and friendship.

‘To know the names of the most famous persons for every faculty and talent at home and abroad.

‘To know the names of 3 or 4 of the best authors upon every faculty.

‘To be well acquainted with 3 or 4 that make news their businesse.

‘To have a Friend in every great office.

‘To heare Tryals, criminal and others.

‘To read Josephus, Molière, Virgil, Cæsar, Sallust and Tacitus without bounds.

‘To study the Mathematicks, Globe, Mapps, measuring Instruments.

‘To learn logick, by reading the most rational Discourses, the History of England and chronological tables.

‘To read Aristotles Rhetorick, Hobbes *de Cive*,³ Justinians Institutions, and the Common Law.

‘To go to Gresham College.’

‘8 July 1686. *Directions for my son Henry,*
borne the 22nd of October, 1675.

‘1. To perfect his Latin by reading the Latin Testament, Corderius, Erasmus, Cicero’s Epistles and Offices, and Justin.

‘2. To write a fast and short hand.

‘3. To make a Leg salute to come into a room.

‘4. To sing.

‘5. To write and read the Court hands and manner of writing.

³ The connection of these two books Hobbes was the translator of the
by Sir William is worth noting, for *Rhetoric* of Aristotle.

‘ 6. Arithmetick and measuring and the Globe.

‘ 7. Map of the world : Europe, England, France, Holland, and, *pro re natâ*, of the countryes which are the scenes of warre and businesse *pro tempore*.

‘ 8. Josephus, and the 6 first chapters of Genesis, St. Luke’s Gospell, The Acts of the Apostles, The Catholic Epistles of Peter, James, John, Jude ; and Homilies, Catechism, Duty of Man, Psalms, Ecclesiasticus.

‘ 9. The English Chronicle ; Bacon’s Collections.

‘ 10. Reynard the fox.

‘ To know the Inns of Court, Chancery, and Guild Hall ; the Sessions Houses ; Doctors Commons, Westminster Hall ; the great offices and priveleged places ; The Arches, &c.

‘ To hear Tryals of Criminals, and see executions of several kinds.

‘ To read Latin abbreviations in printed books of law.

‘ To know the names and chambers of all the chief Lawyers and Attorneys.

‘ A list of 500 great Estates in England, Coats of Armes and Pedigrees.

‘ At 14 or 15 years old to be with the best attorney for 3 years, and to be entered at some Inn of Court at 17 years old.

‘ To read Aristotles Rhetorick and Logick ; Hobbes *de Cive* ; Logick ; Argumentative Discourses ; and begin the Law.

‘ Some more History, Casuistry and Morals.

‘ His father’s writings.’⁴

Southwell himself was constantly consulting his friend on the education of his son Edward—‘ that honey seeking youth,’ as Sir William called him—and was prone to devise elaborate plans for his instruction, according to the most approved methods of the age. On many of these plans Sir William poured good-humoured ridicule. ‘ You would have me do by deare Neddy’s head,’ he tells Southwell, ‘ as my Lady Dutchess of Ormond did to the round tower in Kilkenny ; that is, make his walls thinner, breake out lights, make partitions, set up

⁴ The above papers are at the Hill, Sloane Collection, 2263 ; also among the Petty MSS.
British Museum, among the *Philosophical Papers*, &c., collected by Dr.

shelves, bring in furniture, new frame the stairs, make new passages etc., after which there would be very little left of his head.' ⁵ 'Remember me to dear Neddy,' he writes on another occasion. 'Bid him study moderately, and not burn his fingers with his tonge, nor pinch them in his nose. I say, cram into him some Lattin, some mathematicks, some drawing and some law, (which is almost all done already), and then let Nature work, and let him follow his own inclinations; for further forcing him to learne what *you* like, and not what *he* chooses himself, will come to no great matter. But when you see what he thrives and prospers in, provide him a course of life whereby he may make the best use of his own natural wares.' ⁶

'For further impositions' about Neddy, he writes later on, 'I think them needless. You have planted all necessarys in his ground; you have led him through all the shops and Warehouses of other things. Let Nature now worke, and see what he will choose and learn of himself. What is cramed in by much teaching will never come to much, but parch away when the teachers are gone. Within a year or two, you will have a crisis on him: let's mark that.' ⁷ . . . 'As to the burthen of providing for families, do you mean that a young man of 26 years old should provide for all that may descend from him before fourscore, and that not only for his ordinary food and raiment, but all the extraordinary disasters and calamities incidental to man, without any care or labour of ours. For my own part I have made my 3 children to learn and labour proportionally to their ages, and the common rate of others; and a man may as well exceed in his aims and sollicitudes concerning the matter as in talking of meyeriads and millions. *I have laboured for them* 64 years. I do not make my House a Bridewell unto them, nor myself a Bedel. I will take to myself as much as I can use, and divide the rest according to their merits, and it will become them to be thankful for so much, without grumbling that *per fas et nefas* I had not gotten more. To conclude, I do not think

⁵ October 10, 1686.

1682.

⁶ To Southwell, September 16.

⁷ Petty to Southwell, 1686.

that I have managed this matter so as to be worser than an infidel. I have been an Ant, but not an Ant which "*ore trahit quodcunque potest*," but only "*quod Jure potuit, quod posset honore*." Concerning alliances, that is lofty Marriages, I sett down with the Greek posey of my Romsey Schoolmaster King, which is in English : " he that is Married according to himself is well Married : " that is to say in parity or proportion of parts, person, parentage, and fortune. The common opinion of the world shall be my rule. I will not sweat to make my Daughter a fortune nor to be honey for Drones. And I desire to enable my Son to live within the compass of that wifes fortune which himself best loveth. Concerning leaving money or land to a son, I incline to your opinion : it is better to leave a Son 50*l.* worth of land well settled than 50*l.* in money. But if he be an ingenious active lad it is better to bestow 5 thousand pounds upon him in an office worth one thousand pounds per ann., than to sett him to plow upon a farm of 250 pounds per ann. Five thousand pounds will buy but 250 pounds per ann. in land, about 400 pound a year in houses. A thousand pound a year in offices will buy as many things as will bring in 2 thousand pounds per ann. and as many low priced houses as may be hyred for above 4*l.* Soe that it dependeth upon a good Judgment to determine with what species of effects to stock ones Children.' ⁸

In 1687 the 'Principia' of Newton appeared. Sir William was one of the few who at once perceived the transcendent merits and importance of the book. 'Poor Mr. Newton,' he wrote on July 9 of that year to Southwell, 'I have not met with one person that put an extraordinary value on his book. . . . I would give 500*l.* to have been the author of it; and 200*l.* that Charles understood it.' ⁹

On August 16, 1687, he wrote to Southwell : 'I have had no letter from Charles, since the 8th instant from Amsterdam. I only say God send him luck; and then a little learning will serve his turn; for of the hundred prosperous men which we have seen since the year 1660, neither the learning nor parts of five have been admirable; and the forty

⁸ December 13, 1686.

⁹ To Southwell, July 9-23, 1687.

five contemptible; nor have one quarter of that hundred thriven by following the course which their parents put them into. I do perfectly approve of your advice concerning Mountebank players; but we eate toads and wash our hands in molten lead to sell of our oyntments for the itch. . . . I gave the King a paper at Windsor,' he goes on to tell Southwell 'entitled "the weight of the Crown of England in 20 short articles," more stupendous than what I sent you. I desired the King to pick out of the whole one article which he wisheth to be true, and another which he thinketh to be false, and command me within 24 hours and within one sheet of paper, to shew him my further thoughts concerning them. All was very well taken, but without getting butter to my parsnips, or Hobnayles for my shoes; and poor Mr Newton will certainly meet with the same fate, for I have not met with one man that putt an extraordinary value on his book. Now because you cannot believe that my Projects can gaine the Nation 140 millions, I send you another paper to shew how 619 millions might be gotten in 25 years, and have the five points whereon the same is bottom'd, as well demonstrated as in the Pulpit and at the Bar. As usual you will ask me why I persist in these fruitless labours. I say they are labours of pleasure; of which ratiocination is the greatest and most angelicall; and, being by my age near Heaven, I think it high time to build myself a Tomb on Earth, out of these Materialls to which I hope you will furnish mortar in due time. You will say the "double-bottom" hath poysoned my proposals, to which I say that y^e Closet I shew'd you contains the solution of all questions in Shipping and Sayling. A vehement combination against me made the fourth attempt worse than the first; I courted the King's mysteries, and like Actæon would have seen Diana naked, and was therefore sett upon by many cruel dogs.'

The end was now very near. In December he was taken ill, but without apparently entertaining any serious fear for his life at the moment, and he wrote to Southwell, the old combative spirit reviving: 'On Saturday I was taken with a great lameness. I have nevertheless shewn how the Farmers are overpaid all their demands by 2,183% ;' and he announces

his intention of yet being even with them. If he was to die, he would fight up to the end and die in harness; and, notwithstanding the acute pain he suffered, he attended the annual dinner of the Royal Society. But it was the last flicker of the expiring lamp, and he was observed by his friends to be discomposed. Immediately afterwards he sickened, his foot gangrened, mortification set in, and on the night of December 16 he died in a house in Piccadilly, opposite to St. James's Church. It was just a year before King James fled from England.

'Sir W^m Petty,' Lord Weymouth wrote to Sir Robert Southwell, 'dyed whilst I was in towne, and I think I saw him the moment he was taken ill. You know St. Andrew's day is the Election of Officers for the Society, when my Lord Brouncker was again chosen President. At dinner at Pentack's, where we had but one bottle of wine between two, Sir W^m Petty fell very roughly upon Mr. Tovey, to soe unusual a degree for a man of his breeding and temper, that my Lord Carbery and I wondered at it, and fancied he might have drunk some wine in the morning; but it appeared afterwards to be the beginning of his distemper, for he went home ill, and the humours fell into his leg, which gangrened in a very few days. The subject of his dispute with Mr. Tovey was about the weight of woods; Sir William affirming that Quince wood was the heaviest of all woods, and though Mr. T. argued little and very modestly, Sir William fell upon him with reproachful language. He was certainly a very great man, and I heartily wish some knowing person might have the perusal of his papers, for I am told he had excellent things by him. It was for some time observed by some of his friends that the injustices done to him in Ireland, where he had lost above 700*l*. per annum very much discomposed him, upon the apprehension that the same method would strip him of the rest.'¹

Charles Petty had returned to England before his father's death. 'Dear Cousin,' he wrote to Edward Southwell, 'if there be anything to ease the great affliction I lie under for the loss of such a father, the part Sir Robert and yourself take in

¹ To Southwell, January 4, 1688.

it would much contribute thereunto ; but what shall I say ? The blow is very heavy and lowde. God make me to submit to his will ; for myself I can do nothing. I know you have kindness enough for me to suffer my complaint, but all I can say is too short to express my sorrow. And as an high aggravation I see dayly my dear mother under an unexpressable grief ; and indeed she has reason, for she has lost the best of friends, who living and dying manifested his true value for her, commanding us to obey her as the best mother in the world. It was a great satisfaction to me to see how like a Christian and philosopher he left this world. It has taken off from me the fear of death to see him die, and I do not think death so terrible as people make it. I have no more to say, only to beg you to intercede with your father that he will please, for my father's sake, to take me under his protection and preserve me a place in his friendship, which I shall endeavour to deserve by all wayes imaginable and in the power of his and yours most affectionate kinsman and humble Servant,

‘ CHARLES PETTY.

‘ As soon as my mother is able to write, she will not faile to acknowledge the favour of Sir Robert's letter.’

Sir William was at work till the end, and there was found in his pocket on his decease a paper entitled : ‘ Twelve Articles of a good Catholique and good patriot's creed ’—which appears to be the paper alluded to in his letter of August 16, as having been sent to Southwell.² It contained a summary of the plans with which the reader is already acquainted.

‘ *Twelve Articles of a good Catholicque and good patriots creed.*
By Sir William Petty.³

‘ 1. That $\frac{1}{100}$ th parte of the Men naturally able to learn Arms is a Competent Army to be kept in pay.

² Sir Robert Southwell became Secretary of State for Ireland in 1690. He died September 11, 1702, at King's Weston, near Bristol. He served in three Parliaments and was five times President of the Irish Royal Society.

Edward Southwell became Secretary of State in succession to his father till 1720. He died in 1730.

³ Longleat MS.; endorsed, ‘ Found in his pocket after his death.’

‘2. That $\frac{1}{24}$ th parte of the peoples Expence, is a Competent Revenue for England in peace and warr.

‘3. That the officers of the above Army, being $\frac{1}{10}$ th of the same, with a few others, seems to be the Naturall and to have been the originall House of Peers.

‘4. That the Council elsewhere described, chosen by God and the whole people, is a good Representation of them and of the Church Nationall.

‘5. That an account of [the] lands and hands of all the King’s Subjects, is an effectuall Instrument of Government.

‘6. That it is not the Interest of England to seek more Territoryes nor send out its Subjects, but to unite Ireland with England and soe enlarge their trade.

‘7. That the Navy Royall should consist of particular ships, with a perfect account of all others, both at home and abroad.

‘8. That there should be a Bank, sufficient for all the trade these Nations are capable of, as alsoe a Register of lands.

‘9. That Liberty of Religion and Naturalization be secured.

‘10. That the Coynes, weights, and measures, be made regular and unabuseable.

‘11. That there be a Reformation of Diocesses, parishes, and Church Duties.

‘12. That means be used to lessen the plagues of London which probably the next time will carry away twenty thousand people, worth seventy pound p. head.’

Another paper in his handwriting was found on the table in his room, containing a remarkable forecast of the course of events in England and Ireland in the great struggle which was so clearly at hand. It ran as follows:—

‘When the Establishment of Popery in England is found impracticable, then K. J., being a friend, and the Irish officers, with their 8,000 soldiers, will make a Convention of the forfeiting Irish and a Militia of 15,000 men. The French will send 7,000 men and shipping; and will have Cautionary Townes. The Revenue will be 300 thousand per annum, and the Protestants estates, above 800 thousand, in all 1100 thousand;

whereas 450 thousand will suffice. The Irish will send 100 thousand Protestants into France, which 100 small vessells will do in one Sumer; the East India and other trades will be taken from England by the Hollanders. England will swarme and be pestered with poore English driven out of Ireland.

‘The Princess of Orange will question the loosing of Ireland.

‘The Hollanders and all Northerne States will oppose France in having Ireland.

‘The 30 thousand papists of England and Scotland will be sent into Ireland in exchange of the Protestants.

‘The Scotts and fugitive English will come in with Orange and Holland.

‘The French and Irish will invade England, and will be left Prisoners there.

‘The Emperour and Spain will fall upon France.

‘The Venetian and the Turk [will be] busied.

‘1. The Brittish will beat the French and Irish, and keep them Prisoners in England.

‘2. The Irish and French will be brought Captives into England.

‘3. Ireland and the Northern third of Scotland will be made a place of pasturage.

‘4. 9,600 thousand English, Irish, and Scotch, and 2,000 thousand out of France, will plant in 58 millions, and be a Republick, at y^e upshot of the troubles, at 5 livres to each head.’⁴

Lady Petty was created a Peeress for life by King James, who appears to have entertained a sincere goodwill for Sir William, and possibly regretted that his own policy in Ireland had proved so disastrous to his friend. She became Baroness Shelburne in the Peerage of Ireland, and Charles, her eldest son, Baron Shelburne, by a simultaneous creation.⁵ In the events which followed, Lord Shelburne was attainted, and the whole of the Petty estates were sequestered by the Irish Parliament in 1689, but they were restored by the events of

⁴ Longleat MS.

⁵ The privy seal is dated December 6, 1688, five days before the flight of

James II. from England. The patent was passed December 31 of the same year. Rot. de A^o, 4 Jac. II. 6, p. 1.

1690. The barony became extinct by the death of Lord Shelburne without issue in 1696. It was revived in favour of his brother Henry in 1699, who was further created Viscount Dunkerron and Earl of Shelburne in 1719. These titles becoming extinct on his death without issue in 1751, the estates and property passed to his nephew, John Fitzmaurice, the second surviving son of Thomas Fitzmaurice, Earl of Kerry, who, as his grandson afterwards wrote, had 'married luckily for me and mine, a very ugly woman, who brought into his family whatever degree of sense may have appeared in it, or whatever wealth is likely to remain in it.'⁶ This ugly but sagacious woman was Sir William's daughter, Anne Petty, who by marrying in Ireland had complied with the express desire of her father, that such a sum as he had left her in his will should not be carried out of that country.⁷

A short time before his death Sir William had written to Southwell on the question of mourning for the dead. The letter was occasioned by the loss of a favourite child by Sir Robert, who in his grief had asked his friend's views on what degree of sorrow it was legitimate to express by public and outward show. 'When any one dies,' he replied, 'who had promoted your honour, pleasure, or profit, and still desired so to do, 'tis manifest you mourn for yourself and your own Life, and may express or suppress the signs of it, as you think fit to make the world understand what esteem you had of the defunct, and to encourage the living to serve you as the defunct had done. And you shall mourn very properly in this case, if you give to the defunct's surviving friends what you owed to the defunct for the good he had done you in his life more than you had requited by reciprocal kindness; whether by black, called mourning garments, or by rings with Death's heads on them, by boxes of sweetmeats, burnt wine or rosemary within sweet water, or by gloves and scarfs, or any other effectual way or signs of gratitude, which the world understands, but without

⁶ *Life of Lord Shelburne*, Chapter of Autobiography, vol. i. p. 3. The Shelburne title was again revived in

favour of John Fitzmaurice.

⁷ See Appendix, 'Will.'

cutting off your joints,⁸ as the “Foppes ” and other Coxcombs you mention. I say you need not punish yourself, but with parting with what you can spare as aforesaid, and giving to those of the Defunct’s friends that most want it. As for Bells, Sermons, Coffins and Couches, you are to defend yourself from the reproaches, grounded upon the custom and opinions, true or false, of the country and age you live in. If you found such signs of God’s grace in your friend as persuade you he is in Abraham’s bosom with poor Lazarus, or in Paradise with the penitent thief expecting a glorious resurrection and consummation of his bliss, I think you need not mourn at all, except as aforesaid. But if you suspect him to be in chains of darkness, you must grieve that you did not by your precepts and example prevent his sad condition; and if you believe that any sort of man can relieve him, you shall do well to hire him at any rate to do so, and in the meantime have such a compassion with the defunct, as unison harp-strings have one with another: and you must warn the living (especially the defunct’s friends) to avoid all those things that caused your fears concerning him; for Dives desired that one might be sent from the dead to his brethren on earth for that purpose.’⁹

Sir William in his will ordered his own funeral charges not to exceed 300*l*. He was buried in the Abbey Church at Rumsey near his father and mother. He left a sum of 150*l*. for a family monument, which he had intended to erect during his lifetime, and he had actually gone as far as to write the inscription for it, in which he specially recorded his affection for his brother, Anthony Petty, in whose memory he also ordered ‘a stone worth 5*l*.’ to be set up in Lothbury Church. The inscription was to be as follows:

‘Here lyeth Anthony Petty, who died 22 July 1654, and Francesca his wife, who dyed Oct^r 1663, whose children were Anthony, Francesca, William, Susan, Anthony J^r and Dorothy, of whom the first, second and fourth dyed Infants. Anthony Jun^r dyed at London 16 Oct^r 1649, admirably skilled in all naturall and practicall knowledge. Dorothy, married to James, Son of Sir Nathaniel Naper, Baronet, liveth yet in

⁸ In the sense of a knot of ribbands.

⁹ June 5, 1686.

Meath in Ireland ; and William having many wayes tryed his fortunes was, anno 1649, after much foreign travel, made Doctor of Physic and Professor of Medicine in Oxford. Then, having geometrically surveyed all Ireland in 13 months and therein measuring as much Line as would encompass the whole Earth above 5 times about, was anno 1661 Knighted, and now being 46 ann. of age hath in memory of his family and in due acknowledgment of his Parents exemplary care in the education of their children, erected this Tomb and given his whole patrimony for pious uses to this Town.' ¹

But altered circumstances and the stress of the times caused him to abandon his good intentions towards his native town, and his will, dated May 2, 1685, was found to contain the following curious passage in regard to charitable bequests :—

‘ As for legacies for the poor, I am at a stand ; as for beggars by trade and election I give them nothing ; as for impotents by the hand of God, the publick ought to maintain them ; as for those who have been bred to no calling nor estate they should be put upon their kindred ; as for those who can get no work, the magistrate should cause them to be employed, which may be well done in Ireland, where is fifteen acres of improveable land for every head : prisoners for crimes by the King ; for debt by their prosecutors.

‘ As for those who compassionate the sufferings of any object, let them relieve themselves by relieving such sufferers ; that is, giving them alms *pro re natâ*, and for God’s sake relieve those several species above mentioned, where the above-mentioned obligees fail in their duties. Wherefore I am contented that I have assisted all my poor relations, and put many into a way of getting their own bread ; and have laboured in publick works, and by inventions have sought out real objects of charity ; and do hereby conjure all who partake of my estate, from time to time to do the same at their peril. Nevertheless to answer custom, and to take the surer side, I give 20*l.* to the most wanting of the parish wherein I die. . . .

¹ The patrimony was the family house and property in the town.

‘As for religion, I die in the profession of that faith and in the practice of such worship, as I find established by the law of my country, not being able to believe what I myself please, nor to worship God better than by doing as I would be done unto, and observing the laws of my country, and expressing my love and honour to Almighty God by such signs and tokens as are understood to be such by the people among whom I live, God knowing my heart even without any at all. And thus, begging the Divine Majesty to make me what he would have me to be, both as to faith and good works, I willingly resign my soul into his hands, relying only on his infinite mercy and the merits of my Saviour for my happiness after this life ; where I expect to know and see God more clearly, than by the study of the Scriptures and of his works, I have been hitherto able to do.

‘Grant me, O Lord, an easy passage to thyself, that as I have lived in thy fear, I may be known to die in thy favour. Amen.’

It does not appear that the projected monument was ever set up after his death, and till a descendant in comparatively recent years raised a permanent record in the west end of the nave to the fame of his ancestor,² not even an inscription indicated that the founder of political economy lay in Rumsey Abbey ; for the hand of the Church restorer had desecrated even the stone in the aisle which in a previous generation had marked the grave with the simple legend, ‘Here layes Sir William Pety.’³

² In the present century, Henry, third Marquess of Lansdowne, erected a monument by Westmacott. It represents a full-length recumbent effigy of Sir William Petty.

³ The original of the will is in the Registry Office of the Court of Probate in Ireland. There is a copy in the Egerton MSS. (2225), British Museum.

APPENDIX

I

A copy of the Collection of Sir William Petty's several works since the year 1636, found at Wycombe, in his own handwriting :—

- | | | | |
|---------------|---|-------|---|
| Caen | { | 1637. | A course of practicall Geometry and Dialling. |
| | | 1638. | Cursus Rhetorices et Geographicæ. |
| London | { | 1639. | A system of Astronomy { Ptolemaical, and
Copernican. |
| | | 1640. | Severall Drawings and Paintings. |
| | | 1643. | An English Poem of Susanna and the Elders. |
| | | „ | Collegium Logicum et Metaphisicum. |
| Holland | { | 1644. | A Collection of the Frugalities of Holland. |
| (lost at sea) | | 1645. | An history of seven Months practice in a Chemical
Laboratory. |
| Paris | { | 1646. | A Discourse in Latin, 'de Arthritide et Lue
Venereâ ;' and 'Cursus Anatomicus.' |
| Oxford | | 1647. | Advice to M ^r . Hartlib about the advancement of
learning. Collections for the history of Trees, etc. |
| London | { | 1648. | The double writing Instrument.
The engine for planting Corne, and Printing ;
Boyling Waters, Woods. |
| Oxford | | 1649. | Six Phisico-Medicall Lectures, read at Oxford. |
| London | { | 1650. | Severall Musick Lectures. Hester Ann Green.
Three Osteological Lectures. |
| | | 1651. | Collection of Experiments. |
| | | 1652. | Pharmacopœa and formula Medicamentorum.
Observationes Medicæ et Praxis. |
| Ireland | { | 1653. | De Plantis. Notæ in Hippocratem.
Scholaris situlifuga. Poemata Liturgica. |
| | | 1654. | A Discourse against the Transplanting into Con-
naught. |
| | | 1654. | A Treatise of irregular Dials. |
| | | 1655. | The Grand Survey of Ireland. |
| | | 1656. | Severall Reports about settling the Quarters and
Soldiers. |
| | | 1657. | Breviar-ia, Clerk of the Council. |
| | | 1658. | Letters, etc., between the Protector and the Lieut.
Gov. of Ireland. |

1659. The history of the Survey and first Distribution of Lands in Ireland.
1660. Brev: against Sankey, and William Petty's own apology.
1660. Observations on the Bills of Mortality.
1661. A Discourse about registry, and Settlement of Ireland.
1662. Treatise of Taxes { Materialls of
a Bill and
Small money.
1663. The Grand Map of Ireland, and Brev. of Boroughs.
The Natural History of religion { History of Clothing.
History of Dyeing.
- Satyricall Poems { De motu maris et ventorum.
De medicinis solutis per aquam
et aera.
1664. Naval Experiments and Discourses. { Navicula Gemina.
Reterium Nauticum.
1665. Verbum Sapienti, and the value of People. { Anatomia Navalis.
- English Translation of Hermes, per Alex. Brome.
1667. Lawsuits.
1668. Poemata Glanarita.
1669. Severall Latine Epigrams.
1670. Anatomia Politica Hiberniæ.
1671. Political Arithmetick.
1682. Quantulumque concerning money.

II

*Sir William Petty's Will, extracted from the principal Registry of
Her Majesty's Court of Probate in Ireland*

In the name of God. Amen.—I, Sr William Petty, Knt, born at Rumsey, in Haumtshire, doe, revoking all other and former wills, make this my last will and testament, premising the ensuing preface to the same, whereby to express my condition, designe, intentions, and desires, concerning the persons and things contained in and relating to my said will, for the better expounding any thing which may hereafter seem doubtfull therein, and also for justifying in behalfe of my children the manner and means of getting and acquiring the estate w^{ch} I hereby bequeath unto them, exhorting them to emprove the same by no worse negotiations. In the first place, I declare and affirme that at the full age of fiftene years I had obtained the Lattin, Greeke, and French tongues, the whole

body of common Arithmetick, the practicall Geometry and Astronomy conducing to Navigation, Dialing, &c., with the knowledge of severall Mathematicall Trades, at which, and having been at the University of Caen, preferred me to the King's Navy, where, at the age of 20 years, I had gotten up about three score pounds, wth as much mathematics as any of my age was known to have had. With this provision, Anno 1643, when the civill warrs betwixt the King and Parliament great hatt, I went into the Netherlands and France for three years, and having vigorously followed my studies, especially that of medicine, att Utretch, Leydon, Amsterdam, and Paris, I returned to Rinsey, where I was born, bringing back with me my brother Anthony, whom I had bred, with about ten pounds more then I had carried out of England; with this £70 and my endeavours, in less than four years more I obtained my degree of Doctor of Phisick in Oxford, and forthwith thereupon to be admitted into the College of Phistians, London, and into severall clubbs of the virtuous, after all which expenses defrayed I had left twenty-eight pounds; and in the next two years being made Fellow of Brasen Nose, and Anatomy Professor in Oxford, and also Reader at Gersham Colledge, I advanced my said stock to about four hundred pounds, and with £100 more advanced and given me to go for Ireland into full five hundred pounds. Upon the tenth of September, 1652, I landed att Waterford, in Ireland, Phisitian to the army who had suppressed the Rebellion began in the year 1641, and to the Generall of the same, and the Head Quarters, at the rate of 20s. per diem, at which I continued till June, 1659, gaining by my practice about £400 per annum, above the said sallary. About September, 1654, I, perceiving that the admeasurement of the lands forfeited by the forementioned Rebellion, and intended to regulate the satisfaction of the soldiers who had suppressed the same, was most unsufficiently and absurdly managed, I obtained a contract, dated the 11th of December, 1654, for making the said admeasurement, and by God's blessing so performed the same as that I gained about nine thousand pounds thereby, which, with the £500 above-mentioned, my sallary of 20s. per diem, the benefit of my practice, together with £600 given me for directing an after survey of the advent^{rs} lands, and £800 more for 2 years' sallary as Clerk of the Councell, raised me an estate of about thirteen thousand pounds in ready and reall money, at a time when, without art, interest, or authority, men bought as much lands for 10s. in reall money, as in this year, 1685, yield 10s. per ann. rent above his *Maties* quitt rents. Now I bestowed part of the said £13,000 in soldier's debentures, part in purchasing the Earl of Arundell's house and garden in Lothbury,

London, and part I kept in cash, to answer emergencies ; hereupon I purchased lands in Ireland with sodier's debentures, bought att above the market rates, a great p^t whereof I lost by the Court of Innocents, anno 1663, and built the said Garden called Token House yard, in Lothbury, which was for the most part destroyed by the dreadfull fire, anno 1666. Afterwards, anno 1667, I married Elizabeth, the relict of S^r Maurice Fenton, Barronett. I sett up iron works and pilchard fishing in Kerry, and opened the lead mines and timber trade in Kerry, by all which, and some advantageous bargains, and with living under my income, I have, at the making this my will, the reall and personall estate following (viz^t.), a large house and 4 tenements in Runsey, with 4 acres of meadow upon the causway, and about 4 acres of arrable in the fields called Marks and Woollsworth, in all about thirty pounds per ann. ; houses in Token house yard, near Lothbury, London, with lease in Piccadilly, and the Seaven Starrs, and the Blazing Starr, in Birching Lane, London, worth about five hundred pounds per ann. ; besides mortgages upon certain houses in Hogg Lane, near Shoreditch, in London, and in Erith, in Kent, worth about £20 per ann. : I have $\frac{3}{4}$ parts of the ship Charles, whereof Deryck Paine is master, which I value at £80 per ann. ; as also the *copper plates for the mapps of Ireland*, with the King's priviledge, which I rate at £100 per ann., in all seven hundred and thirty pounds per ann. I have in Ireland, without the County of Kerry, in lands, remainders, and reversions, about three thousand one hundred pounds per ann. I have of neat profits out of the lands and woods of Kerry, above eleven hundred pounds per ann., besides iron works, fishings, and lead mines, and marble quarrys, worth £600 per ann., in all £4800. I have, as my wife's Joynture, during her life, about £850 per ann., and for 14 years after her death about £200 per ann. ; I have, by £3300 money at interest, £320 per ann., in all about £6700 per ann. The personal estate is as foll. viz^t—in chest six thousand six hundred pounds, in the hands of Adam Loftus £1296 ; of Mr John Cogs, goldsmith, of London, £1251 ; in silver plate and jewells ab^t £3000, in furniture, goods, pictures, coach horses, books, and watches, £1150 per estimate, in all twelve thousand pounds. *I value my three chests of originall mapps and field books, the coppys of the Down Survey, with the Barrony mapps, and the chest of distribution books, with two chests of loose papers relating to the survey ; the two great Barony books, and the book of the history of the survey, altogether at two thousand pounds.* I have due out of Kerry for arrears, May rent, and iron, before 24th June, 1685, the sume of £1912, for the next half year's rent out of my lands in Ireland, my wife's joynture,

and England, on or before the 24 June next, £2000 ; moreover, by arrears due the 30 Aprill, 1685, out of all my estate by estimate and interest of money, £1800 ; by other good debts due upon bonds and bills at this time, per estimate, £900 ; by debts which I call bad, £4000, worth, perhaps, £800 ; by debts which I call doubtful, £50,000, worth, perhaps, 25 thousand pounds, in all, £34,612 ; and the totall of the whole personall estate, £46,412 ; so as my present income for the year 1685 may be £6700, the profits of the personall estate may be £4641, and the demonstrable improvement of my Irish estate may be £3659 per ann., to make in all fifteen thousand pounds per ann., in and by all manner of effects abating for bad debts, about £28,000. Whereupon I say in gross, that my reall estate or income may be £6500 per ann., my personall estate about £45,000, my bad and desparate debts, 30 thousand pounds, and the improvements may be £4000 per ann., in all £15,000 per ann., *ut supra*. Now, my opinion and desire is (if I could effect it, and if I wear cleare from the law custom and all other impediments), to add to my wives joynture $\frac{3}{4}$ of what itt now is computed att, viz^t—£637 per ann., to make the whole £1587 per ann., which addition of £637 and £850 being deducted out of the aforementioned £6700, leaves £5113 for my two sons, whereof I would my eldest son should have $\frac{2}{3}$, or £3408, and the younger £1705 ; and that after their mother's death, the aforesaid addition of £637 should be added in like proportion, making for the eldest £3832, and for the youngest £1916 ; and I would that the improvement of the estate should be equally divided between my two sons, and that the personall estate (first taking out ten thousand pounds for my only daughter,) that the rest should be equally divided between my wife and three children, by which method my wife would have £1587 per ann., and £9000 in personall effects ; my daughter would have ten thousand pounds of the crame, and £9000 more with less certainty ; my eldest son would have £3800 per ann., and half the expected improvements, with £9000 in hopefull effects, over and above his wives portion ; and my youngest son would have the same within £1900 per ann. I would advise my wife in this case to spend her whole £1587 per ann., that is to say, in her own entertainment, charity, and munificence, without care of increasing her children's fortunes ; and I would she should give away $\frac{1}{3}$ of the above-mentioned £9000 att her death, even from her children, upon any worthy object, and dispose of the other $\frac{2}{3}$ to such of her children and grand children as pleased her best, without regard to any other rule or proportion. In case of either of my 3 childrens death under age, I advise as followeth, viz^t—if my eldest, Charles, dye without issue, I would that Henry

should have $\frac{3}{4}$ of what he leaves, and my daughter, Anne, the rest ; if Henry dye, I would that what he leaves may be equally divided between Charles and Anne ; and if Anne dyes, that her share be equally divided between Charles and Henry. Memorandum.—That I think fitt to rate the 30 thousand pound desperate debts at one thousand pounds only, and to give it my daughter, to make her abovem 10^m and 9^m to be full twenty thousand pounds, which is much short of what I have given her younger brother ; and the elder brother may have £3800 per ann. 9^m in money, worth good more £2000 by improvements, and £1300 by marriage, to make up the whole to £8000 per ann., which is very well for the eldest son, as 20 thousand pounds for the daughter. I think, to make a codicill to my will, when I shall find myself sick or decaying, whereby to dispose of severall small legacies, with my funerall charges not exceeding one thousand pounds, I desire may be born by my wife and 3 children as near as may be, according to the proportions above-mentioned. Now, whereas, I have made deeds of settlement, dated . . . for my wife and two sons. And, whereas I have hereby made my yearly income to be £6700, my present will that my wife shall have, besides the provision made by Sr Maurice Fenton, £637 per ann. out of my said £6700, and that what by the said settlement is short thereof shall be made up out of the said £6700, and what is too much shall be abated out of £9000. By the aforemade computation, my eldest son, Charles, when his mother's provision of £850 and £637 is taken out the s^d £6700, will have £3400 per ann. ; whereof if the settlement be short, it must be supplied out of the rest of £6700 ; if too much, his share of the £9000 must be retrencht ; the like I order concerning my son Henry. As my daughter Anne, not meddling with the £3200 at interest, which is part of the £6700 per ann., I give and bequeath to her of the £6600 in chest, and £1251 in Mr Cog's hands, £2149 out of my plate and jewells, the full s^ume—ten thousand pounds—to be paid her at the age of eighteen years ; and I intend that if I shall see cause to dispose otherways of the said effects, to charge the said ten thousand pounds on some other reall security. I hereby make Elizabeth, my beloved wife, sole Executrix of this my will during her widowhood ; but if she marry, I make her brother, James Waller, and Thomas Dance, Exors in her room, in trust for my children. I also make my said wife Guardian of my children during her widowhood, but when she marrys, I appoint the said James Waller and Tho Dance Guardians in her room. I recommend to my Exors and the Guardians of my children to use the same servants and instruments for management of the estates, as were in my life time, viz^t—the said James Waller,

at the yearly sallary of one hundred pounds ster^l per ann. sterling ; Thomas Dance, at fifty pounds ; Thomas Milburne, at twenty, . . . Crofton, at twelve ; and Maurice Carroll, at eight ; as also Richard Orpin, at twenty ; John Mahony, at twenty ; Luke Parker, at five pound ; Phillip Prosser, at five pounds ; and Mr. John Cogs, of London, at twelve ; and Thomas Callow, at six pounds per ann. ; all which sallarys are to continue during their lives, or untill my youngest child shall be one and twenty years, which will be the 22nd of October, 1696 ; unless seven of the persons above named, whereof my wife, Mr. James Waller, and Thomas Dance, shall, under their hands and seals, certifie that any of the said persons have broken their respective trusts and notably misbehaved themselves ; and after the said 22nd October, 1696, every of my children, being of full age, may put the management of their respective concerns into what hand they please, having still a respect to such of the aforementioned as have been dilligent and faithfull in their respective trusts and employments. I would not have my funeral charges to exceed three hundred pounds, over and above which sum I allow and give one hundred and fifty pounds to sett up a monument in the Church of Rumsey, near where my grandfather, father, and mother were buried, in memory of them and of all my brothers and sisters. I also give five pounds for a stone to be sett up in Lothbury Church, London, in memory of my brother Anthony, there buried about the 18th October, 1649 ; I also give fifty pounds for a small monument, to be sett up in S^t Bride's Church, Dublin, in memory of my son John, *and my near kinsman John Petty* ; supposing my wife will add thereunto for her excellent son, S^r William Fenton, Bar^t, who was buried there 18th March, 167⁹ ; and if I myself be buried in any of the s^d 3 places, I would have £100 only added to the above named sumes, or that the said £100 shall be bestowed on a monument for me in any other place where I shall dye. *As for legacies for the poor, I am att a stand : as for beggars by trade and election, I give them nothing ; as for impotents by the hand of God, the Publick ought to maintaine them ; as for those who have been bred to no calling nor estate, they should be put upon their kindred ; as for those who can get no work, the magistrate should cause them to be employed, which may be well done in Ireland, where is 15 acres of improvable land for every head : prisoners for crimes, by the King ; for debt, by their prosecutors. As for those who compassionate the sufferings of any object, lett them relieve themselves by relieving such sufferers, that is, give them alms, pro re nata, and for Gods sake relieve those severall species above named, where the above-named obligers faile in their duties. Wherefore, I am con-*

tented that I have assisted all my poor relations, and put many into a way of getting their owne bread, and have laboured in public works and inventions ; have sought out reall objects of charity, and do hereby conjure all who partake of my estate from time to time to do the same at their perill. Nevertheless, to answer custome, and to take the surer side, I give twenty pounds to the most wanting of the parish wherein I dye. As for the education of my children, which are 2 sons and one daughter, I would that my daughter might marry in Ireland, desiring that such a sum as I have left her might not be carried out of Ireland. I wish that my eldest son may get a gentleman's estate in England, which, by what I have gotten already intend to purchase, and by what I presume he may have with a wife, may amount to between two and three thousand pounds per ann., and by some office he may get there, together with an ordinary superlucration, may reasonably be expected, so as I designe my youngest son's trade and imployment to be the prudent management of our Irish estate for himself and his elder brother, which I suppose his said brother must consider him. For as for myself, I being now about threescore & two years old, I intend to attend the improvements of my lands in Ireland, and to gett in the money debts oweing unto me, and to promote the trade of Iron, Lead, Marble, Fish, and Timber, whereof my estate is capable ; and as for studies and experiments, I think now to confine the same to the anatomy of the people and politicall Arithmetick, as also to the improvement of ships, land, carriages, guns, and pumps, as of most use to mankind, not bleaming the studies of other men. As for religion, I dye in the profession of that faith, and in the practice of such worship, as I find establht by the Law of my country, not being able to believe what I myself please, nor to worship God better than by doing as I would be done unto, and observing the Laws of my country, and expressing my love and honour to Almighty God by such signes and tokens as are understood to be such by the people with whom I live, God knowing my heart even without any at all ; and thus begging the Divine Majesty to make me what He would have me to be, both as to faith and good works ; I willingly resigne my soul into His hands, relying only on His infinite mercy and the merritts of my Saviour for my happiness after this life, whereof I expect to know and see God more clearly then by the study of the Scriptures, and of His works I have been hitherto been able to do. Grant me, O Lord, an easy passage to thyself, that as I have lived in thy fear, I may be known to dye in thy favour. Amen. Dated the second day of May, in the year of our Lord Christ, one thousand six hundred eighty and five.—WM. PETTY.

III

A BRIEF ACCOMPT *of the most materiall Passages relatinge to the Survey managed by DOCTOR PETTY in Ireland, anno 1655 and 1656*¹

BARRONYES in Irland are of various extents, viz^t., some but 8000 acres, and some 160,000 acres.

The first survey or old measurement was performed by measuringe whole baronyes in one surround, or perimeter, and payinge for the same after the rate of 40^s for every thousand acres contayned within such surround; whereby it followed that the surveyors were most unequally rewarded for the same worke, viz^t., he that measured the barrony of 160,000 acres did gaine neere five tymes as much per diem as he that measured that of 8000 acres. Besides, wheras 40^s were given for measuringe 1000 acres, in that way 5^s was too much, that is to say, at 5^s per 1000 a surveyor might have earned above 20^s per diem cleare, wheras 10^s is esteemed, especially in long employments, a competent allowance.

The error of this way beinge discerned, the same undertakers order, that instead of measuringe entire baronyes as before, that scopes of forfeited profitable lands should bee measured under one surround, bee the same great or small, or whether such scopes consisted of many or few ffarme lands, townelands, ploughlands, or other denominations usuall in each respective county or barrony. And for this kind of worke the surveyor was to have 45^s for every thousand acres, abatinge proportionably for such parcells, either of unprofitable or unforfeited land as should happen to be surrounded within any great scope. Now this latter way, besides the inconveniencies above mentioned, laboured with this other and greater, viz^t., that by how much the measurer's paynes and worke was greater, by soe much his wages and allowance was lesse, soe as noe surveyor could foresee wheather hee should be able to performe his respective undertakinge at the rate above said, or that hee should not gaine exorbitantly by it.

Hereupon Dr Petty propounded that the whole land should be measured both accordinge to its civill bounds, viz., by barronyes, parishes, townelands, ploughlands, balliboes, &c., and alsoe by its naturall boundings by rivers, ridges of mountaines, rockes, loughes, boggs, &c.; as answeringe not onely the very ends of satisfyinge the

¹ From a manuscript in the Record Branch of the Office of the Paymaster of Civil Services in Ireland.

adventurers and souldiers then in view, but all such other future ends whatsoever as are usually expected from any survey.

The objection was, that the same would not be don under twenty yeares tyme, and the settlement must be soe longe retarded. It was answered, that security should be given for performinge the whole in thirteen months, provided the allowance might be somewhat extraordinary. Hereuppon the army agree to give out of their owne purses soe much as should be requisite over and above what the councill were limited unto by their superiours.

This undertakinge extended onely to the provinces of Ulster, Leinster, and Manster (that of Connaght beinge reserved for the Irish), nor unto all the lands in the said three provinces, although the same labour and method would have effected the whole, and more, as well as what was.

Now the method and order used by the said Petty in this vast worke was as followeth, viz. :

Whereas surveyors of land are commonly persons of gentile and liberall education, and their practise esteemed a mistery and intricate matter, farr exceedinge the most parte of mechanically trades, and withall, the makeinge of their instruments is a matter of much art and nicety, if performed with that truth and beauty as is usuall and requisite. The said Petty, consideringe the vastnesse of the worke, thought of dividinge both the art of makeinge instruments, as alsoe that of usinge them into many partes, viz^t., one man made onely measuringe chaines, viz^t., a wire maker ; another magneticall needles, with their pins, viz^t., a watchmaker ; another turned the boxes out of wood, and the heads of the stands on which the instrument playes, viz^t., a turnor ; another, the stands or leggs, a pipe maker ; another all the brasse worke, viz^t., a founder ; another workman, of a more versatile head and hand, touches the needles, adjusts the sights and cards, and adaptates every peece to each other.

In the meane tyme scales, protractors, and compasse-cards, beinge matters of accurate division, are prepared by the ablest artists of London.

Whether alsoe was sent for, a magazin of royall paper, mouth-glew, colours, pencills, &c. At the same tyme, a perfect forme of a ffeild booke haveinge bin first concluded on, uniforme bookes for all the surveyors were ruled and fitted accordinge to it, and more-over large sheetes of paper, of perhaps five or six ffoote square, were glewed together, and divided throughout into areas of ten acres each, accordinge to a scale of forty Irish perches to an inch, and other single sheets (by a particular way of printinge dry, in order to pre-

vent the uncertaynties of shrinkinge in the paper) were lined out into single acres.

Dureinge the same tyme, alsoe, portable tables, boxes, rulers, and all other necessaryes, as alsoe small Ffrench tents, were provided to enable the measurers to doe any buisnesse without house or harbour, it beinge expected that into such wasted countryes they must at some tymes come.

Dureinge the same tyme, alsoe, bookes were preparinge of all the lands' names to be measured, and of their eould propreitors, and guesse-plotts made of most of them, whereby not onely to direct the measurers where to beginne, and how to proceed, &c., but alsoe to enable Petty himselfe how to apportion unto each measurer such scope of land to worke uppon, as hee might be able to finish within any assigned tyme.

At the same tyme care was taken to know who were the ablest in each barrony and parish to shew the true bounds and meares of every denomination, what convenient quarters and harbors there were in each, and what garrisons did everywhere lye most conveniently for their defence, and to furnish them with guards, and with all who were men of credit and trade in each quarter, fitt to correspond with for furnishinge mony by bills of exchange and otherwise ; and, lastly, who were men of sobriety and good affection, to have an eye privatly over the carriage and diligence of each surveyor in his respective undertaking.

Another person is appoynted to sollicite under offices for mony, and to receive it from severall publique and private persons, uppon whome each summe was assigned by the publique Treasurer. The same alsoe paid bills uppon stated accompts, drew bills of exchange into the country, &c., as alsoe attended the course of coynes, which often rose and fell in that time ; and was to beware of adulterate and light peeces, then and there very rife.

But the principall division of this whole worke was to enable certayne persons, such as were able to endure travaile, ill lodgings and dyett, as alsoe heates and colds, beinge alsoe men of activitie, that could leape hedge and ditch, and could alsoe ruffle with the severall rude persons in the country, from whome they might expect to be often crossed and opposed. (The which qualifications happend to be found among severall of the ordinary shouldiers, many of whom, havinge bin bread to trades, could write and read sufficiently for the purposes intended.) Such, therefore (if they were but headfull and stedly minded, though not of the nimblest witts), were taught, while the other things aforementioned were in doinge, how to make use of their instruments, in order to take the bearinge of any line, and

alsoe how to handle the chaines, especially in the case of risinge or fallinge grounds ; as alsoe how to make severall markes with a spade, whereby to distinguish the various breakings and abutments which they were to take notice of ; and to choose the most convenient stations or place for observations, as well in order to dispatch as certaynty. And lastly, they were instructed, per autopsiam, how to judge of the vallues of lands, in reference to its beare qualities, and accordinge to the rules and opinions then currant, to distinguish the profitable from such as was to be thrown in over and above, and not paid for at all. Another sort of men, especially such as had beene of trades into which payntinge, drawinge, or any other kind of designge is necessary, were instructed in the art of protractinge, that is, in drawinge a modell or plott of the lands admeasured, accordinge to a scale of 40 perches to the inch, accordinge to the length and bearinge of every side transmitted unto the said protractors in the ffield bookes of the measurers last above described ; the which protractions were made uppon the papers aforementioned, which were squared out into areas, some of 10, some of single acres. These men, and sometimes others of smaller abilities, were employed to count how many of the said greater or lesser intire areas were comprehended within every surround.

And withall unto how many inteire acres the broken skirtinge reduced from decimall parts did amount unto, which worke was soe very easie, that it was as hard to mistake, as easie to discover and amend it, and infinitely more obvious to examination and free from error, then the usuall way of reduceinge the whole surround into triangles was, and deducing the content from laborious prostapheresis of them. The next worke was reducinge barrony plotts, which, accordinge to the scale of 40 perches to the inch, were somtymes 8 or 10 foot square, or thereabouts, within the compasse of a sheet of a royal paper, whether the scale happened to be greater or less, soe as all the barrony plotts, being reduced to one size, might be bound up togeather into uniforme bookes, accordinge to the countyes or provinces unto which they did belonge. These reducements were made by paralelagrames, of which were made greater numbers, greater variety, and in larger dimensions, then perhaps was ever yet seene uppon any other occasion. Some hands that were employed in the said reducements did, for the most parte, performe the colouringe and other ornament of the worke.

Over and above all these, a few of the most nasute and sagacious persons, such as were well skilled in all the partes, practices, and frauds, appartayninge unto this worke, or whereunto it was obnoxious, did in the first place view the measurers ffield bookes, and there by

the same critickes as artists discerne originalls from coppyes in paintinge, and truely antique medalls from such as are counterfeit, did endeavour to discover any falsification that might be prejudiciall to the service. The same men alsoe reprotracted the protractions above mentioned, compared the comon lines of severall men's worke, examined wheather any of the grounds given in charge to be ad-measured were omitted; and, lastly, did cast up all and every the measurers workes into linary contents, accordinge to which the said Petty paid his workmen, although he himselfe were paid by the superficial content, or number of acres, which the respective ad-measurements did conteyne; the which course of payment he tooke to take away all byas from his under measurers to returne unprofitable for profitable, or vice versa, he himselfe haveinge engaged, in an ensnaringe contract, begetinge suspicions of those evils against him, in as much as he was paid more for profitable then unprofitable land; for some parcells of unprofitable receveinge nothinge at all. Ffor this end he paid his under-surveyors by the linary content of their worke as aforesaid, though some suspect he rather did it to obscure his gaines, as well from those that employed him as those others whome himselfe employed, and withall, by removeinge the old surveyors from of their old principles, and confoundinge them with new, to make them more amenable to his purposes. The quantitie of line which was measured by the chaine and needle beinge reduced into English miles was enough to have encompassed the world neere five tymes about.

There doe remaine of this worke, as large mapps as a sheet of royall paper will conteyne, of every parish distinctly, by as large a scale as such sheets of paper will contayne, and other mapps of the same size for every barrony.

These are fairely bound up in large bookes, according to their countyes, and the bookes kept in a cabinet of the most exquisit joyner's worke, made for the purpose, of 60^{li} value. Mapps of each county and province, as alsoe of the whole island, wil be published in print, according to the severall ancient and moderne divisions of the same, which have often changed by reason of the often change of proprieties, occasioned by the often rebellions and revolutions there.

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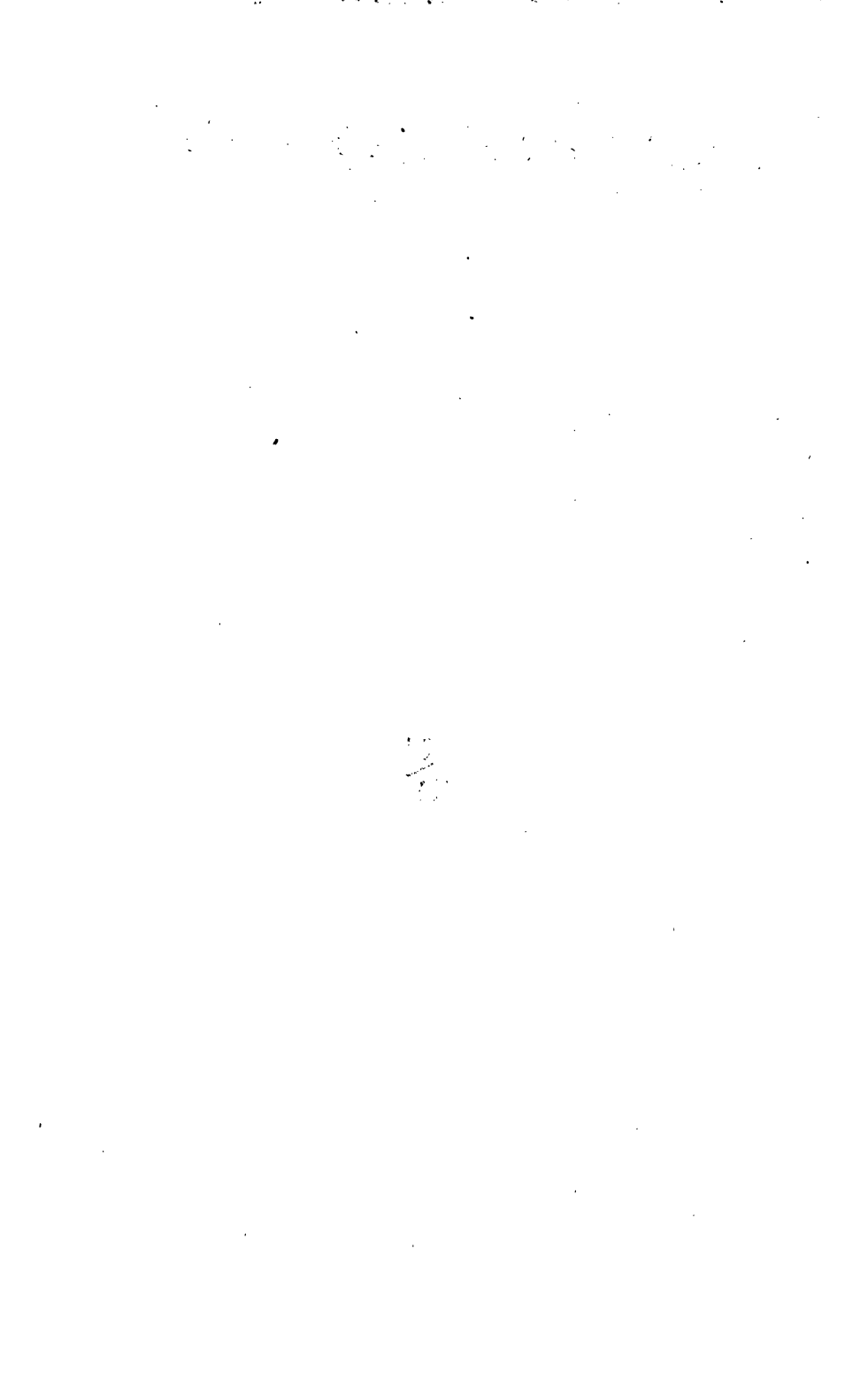
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